Alaska Salmon Industry Baseline Study

2003

Alaska Department of Community and Economic Development
Division of Community Advocacy

Frank Murkowski, Governor
Edgar Blatchford, Commissioner

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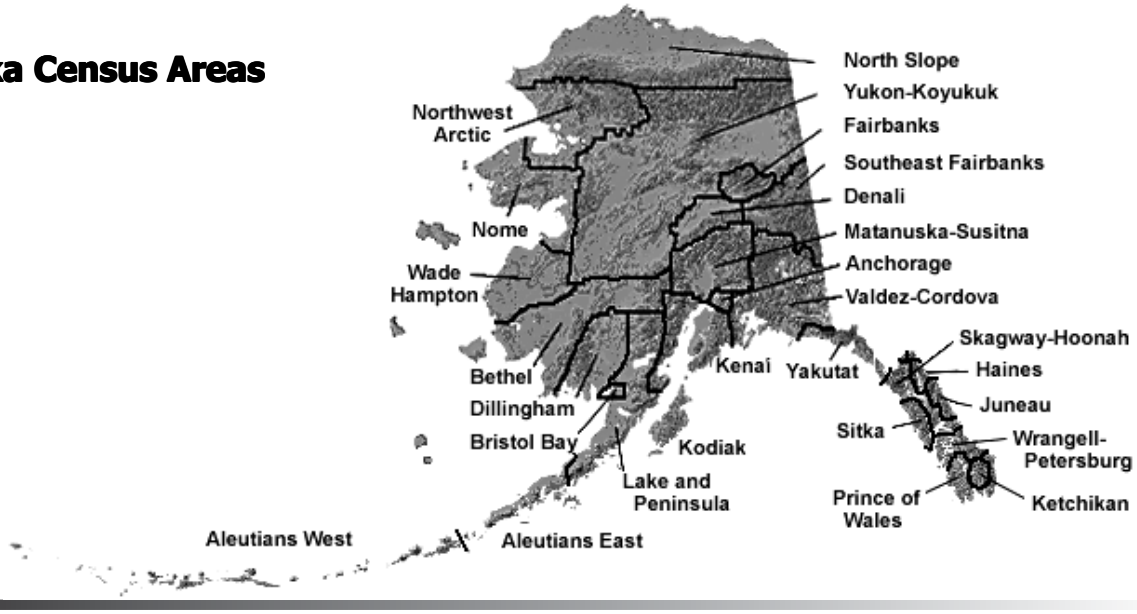
The personal income from commercial fishing is based on census area totals, while the wholesale values for the seafood industry is based on the reporting areas used in Commercial Operators Annual Report (COAR). The relationship of COAR areas used in this report to census areas are as follow:

Region/Subregion	COAR Area Code	Census Area
Southeast — Juneau/Haines	A1	Juneau Borough Haines Borough Skagway-Hoonah-Angoon CA
Souheast — Yakutat	A2	Yakutat Borough
Southeast — Ketchikan/Craig	B	Ketchikan Gateway Borough Prince of Wales-Outer Ketchikan CA
Southeast — Petersburg	C	Wrangell-Petersburg Census Area
Southeast — Sitka/Pelican	D	Sitka Borough Skagway-Hoonah-Angoon CA
Prince William Sound	E	Valdez-Cordova Census Area Kenai Peninsula Borough
Cook Inlet	H	Kenai Peninsula Borough Municipality of Anchorage Mat-Su Borough
Kodiak	K	Kodiak Island Borough
Chignik	L	Lake and Peninsula Borough
Aleutian Peninsula	M	Aleutian East Borough
Adak/Aleutian West	R	Aleutians West Census Area
Bristol Bay	T	Bristol Bay Borough Dillingham Census Area Fairbanks Northstar Borough
Kuskokwim	W	Bethel Census Area
Kotzebue	X	Northwest Arctic Borough
Yukon River	Y	Yukon-Koyukuk Census Area Wade Hampton Census Area Fairbanks Northstar Borough
Norton Sound	Z	Nome Census Area

Alaska Census Areas



Introduction

With the goal of understanding trends in the Alaska salmon industry, this study examines the Alaska economy over the last three decades. To provide a more locally oriented perspective, the study focuses on regional economies defined by the 27 U.S. Census Areas in Alaska. Three census areas are not included in this study (Southeast Fairbanks, Denali Borough and North Slope Borough) because residents do not participate in one or more of the state's salmon fisheries. A community by community assessment is precluded due to the confidentiality requirements governing proprietary information.

This paper has three major elements. The first part provides a statewide and historic perspective of the salmon industry. The second part examines trends in the salmon industry at the census area level. The third part presents the findings of a survey based on resident fishers have left the salmon fisheries (transferred their limited entry permits).

Part I: Background

Statewide Economic Context

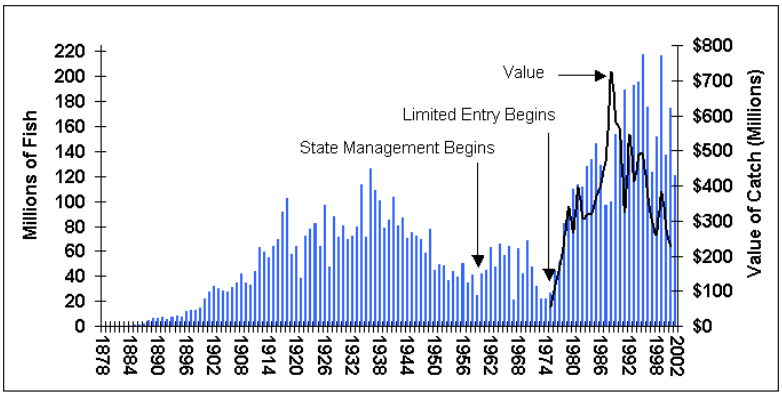
Like a number of other basic industries in the Alaska economy the salmon industry is overshadowed by the oil industry and the State spending of oil revenues. For comparison, the largest basic industry is oil and it accounts for about 20 percent of the total economy. The next three largest base industries are seafood, tourism, and mining — each four to five percent. When salmon is isolated from the seafood industry, it accounts for about two percent of the state's economy and is declining.

Retail trade and services are the fastest growing economic sectors. State spending, the Permanent Fund dividend and to a lessor extent federal spending have allowed the retail trade and service sectors to flourish. About two-thirds of total state spending goes directly to Alaska businesses, to households, local governments, and non-profit organizations. In addition, total federal expenditures are about $6 to $7 billion, or 23 percent of the total economy. The growth in retail trade and services is reducing the economic role of salmon, in addition to the loss in market shares from Alaska wild salmon to farmed salmon.

The Alaska salmon industry is facing fundamental market changes due to the rapid growth and sheer size of foreign-farmed salmon. Alaska's largest salmon harvest ever was in 1995 but even this harvest was already surpassed by farmed salmon. The success of farmed salmon is forcing the Alaska salmon industry to reexamine its operations and seek ways to improve product quality and expand product forms.

The Alaska salmon industry consists of a collection of smaller regional fisheries with varying characteristics and issues. In general, the more remote fisheries are more vulnerable due to higher processing and transportation costs. While declines in salmon prices have the greatest impact on these remote fisheries, particularly Western Alaska, negative impacts are occurring in all regions of the state. One indicator is the long-term decrease in Alaska wholesale salmon prices, which have generally fallen since 1985. One notable exception is the strong upward price trend for Yukon River King salmon. However, smaller salmon runs are precluding a stable commercial fishery. There are two other regions with upward wholesale price trends, Kotzebue and Norton Sound. Unfortunately, these fisheries are small and erratic.

Figure 1.
Alaska Commercial Salmon Catches and Value, 1878-2002, All Species.



Historical Perspective

For more than a century, salmon has been an important economic engine for coastal communities from Kotzebue to Ketchikan, as well as the villages along Alaska's major rivers, the Yukon and Kuskokwim. However, as shown in the chart on the following page, salmon returns and values have historically been volatile. Over time, this volatility led many salmon fishers to diversify into other fisheries, which has enhanced the economic viability of the fishing industry as a whole. The

Figure 2.
Gross Earnings, All Alaska Fisheries.

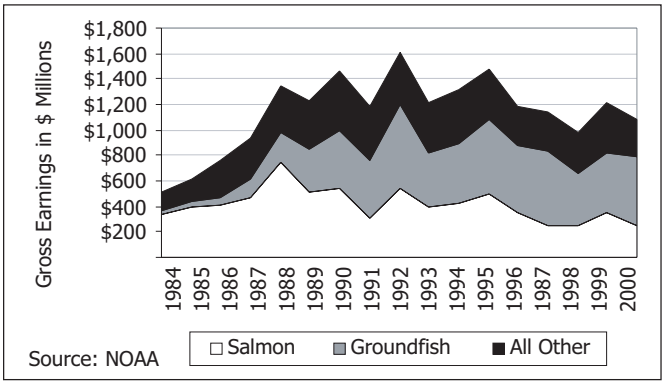


Figure 3.
Trends in Gross Earnings, All Alaska Fisheries.

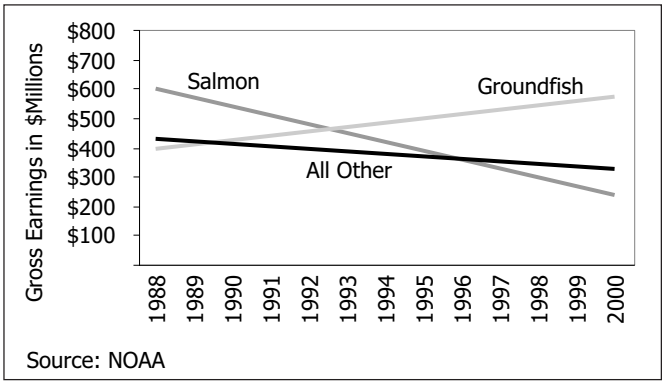
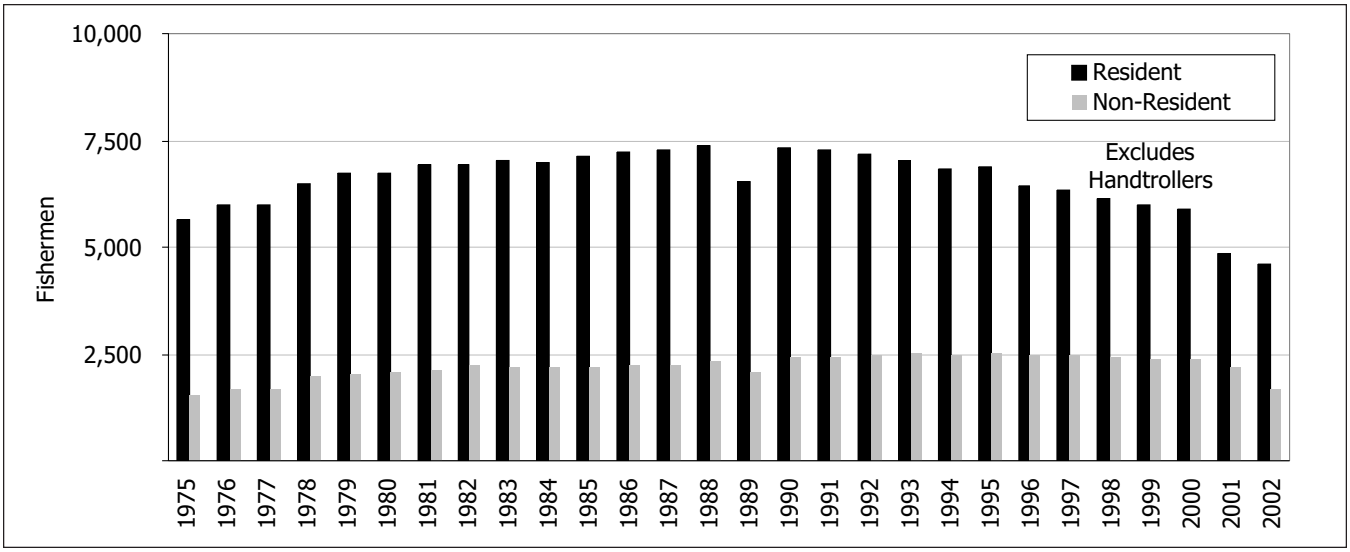


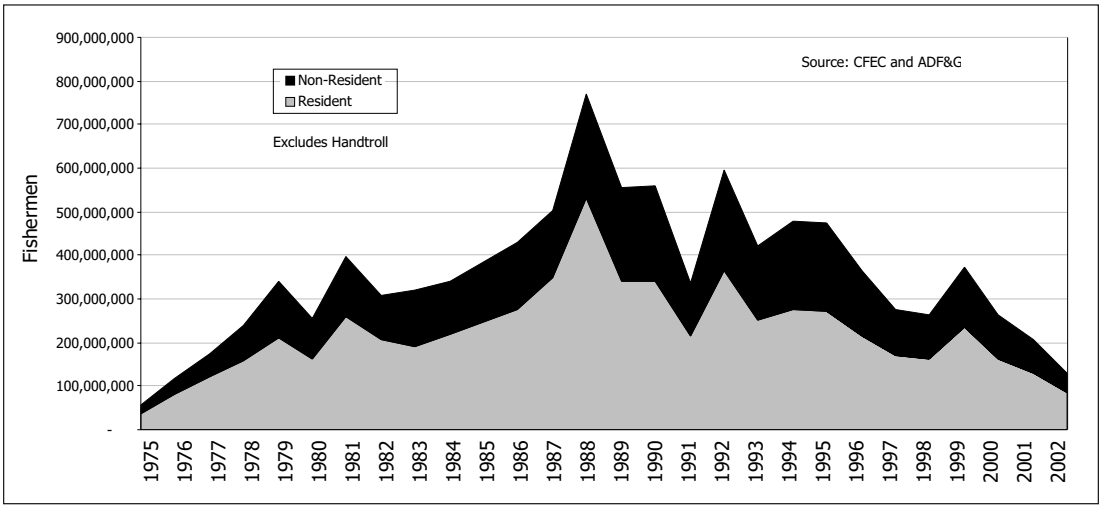
Figure 4.
Salmon Fishers.



notable exception is the Bristol Bay fishery, which has continued to focus almost exclusively on salmon.

Diversification and lower dependence on salmon is indicated in the chart below of statewide gross earnings for all fisheries from 1984 to 2000. Statewide trends in the value paid to fishers for salmon and other fisheries is also shown. In 1984, salmon gross earnings were $343 million and represented 67 percent of the total gross earnings. In contrast, by 2000, salmon earnings were only $142 million, which was 23 percent of total gross fisheries earnings. The relative decline in salmon is a function of

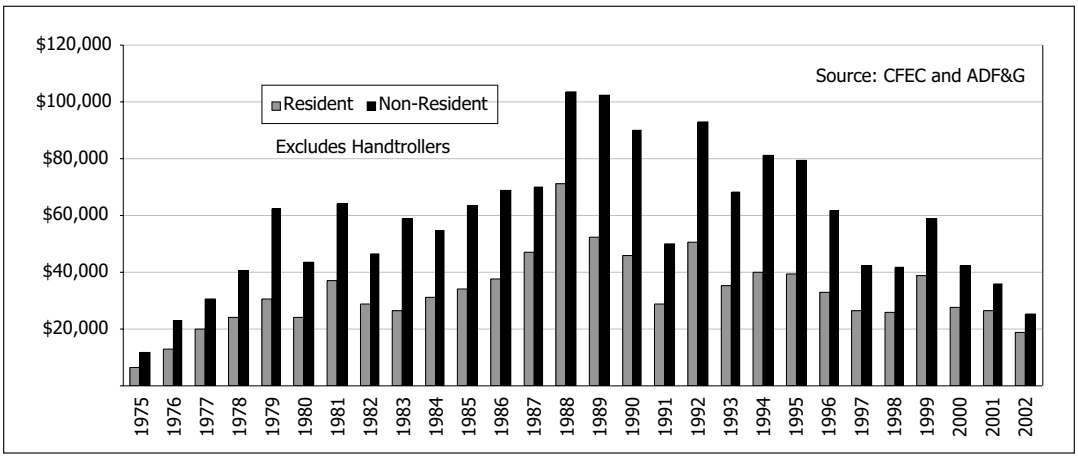
Figure 5.
Ex-vessel Value, Salmon Fisheries.



falling prices in recent years as well as the rise of the groundfish industry. Groundfish gross earnings were $27 million in 1984 and were $546 million in 2000. The volatility within selected salmon fisheries around the state is demonstrated in more detail in Appendix A.

The figure on the prior page shows the trend in total salmon fishers, by residents and non-residents. There have always been more resident salmon fishers than non-residents fishers. However, from 1988 to 2000, Alaska residents have left the industry at a faster rate. Since 2000, departure rates for both resident and non-resident are similar and accelerating.

Figure 6.
Earnings Per Fisher, Salmon Fisheries.



As shown in the chart on the prior page, total gross earnings have also always been greater for residents. This is due to the higher number resident fishers. However, the most interesting story relates to the average earning per fisher, which has been greater for non-residents than for residents. The chart below compares earnings per fisher for residents and non-residents since 1976. The difference between residents and non-residents is primarily related to gear types. Residents participate more in certain gear types, such as set-nets, where earnings per permit are lower. Conversely, non-residents have had a greater participation in larger scale gear types, such as seining. Note that the handtrollers gear type is excluded in the figures below. Handtrollers are nearly all residents and have accounted for as much as 24 percent of the number of active fishers. However, earnings by handtrollers account for only about 2 percent of the total earnings and consequently skew the averages for resident versus non-resident earnings per fisher.

Since 1990, a significant number of resident salmon fishers have quit fishing, while the number of non-resident fishers remained relatively constant until 2000. Since 2000, both resident and non-resident fishers are leaving the salmon fisheries at accelerated rates.

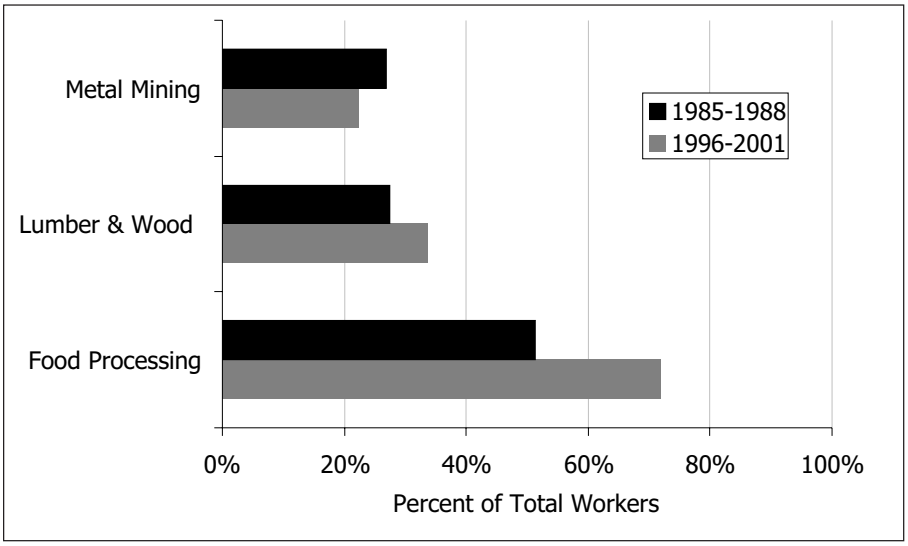
Limited Entry

In response to over-crowding in the salmon fisheries, Alaska's limited entry system was adopted in 1975. The purpose of this system was to help insure the long-term economic viability of the salmon fisheries by restricting the number of fishers so that each fisher has a reasonable chance of economic success. In 1975, the number of commercial salmon fishers stood at 8,247, of which 6,670 (79 percent) were residents. Total ex-vessel salmon value was $55 million, of which $37 million was earned by Alaskans (67 percent). Both the numbers of fishers and ex-vessel values generally increased from 1975 to 1988 when the total number of active salmon fishers was 10,512. During that same period, the ex-vessel value, buoyed by rebounding runs and strong prices, had increased dramatically to $766 million. Alaska residents earned 69 percent of this amount, or $340 million. However, from 1988 to 2001, the favorable trends reversed. By 2002, the total number of active fishers decreased by 38 percent to 6,567, and the total ex-vessel salmon value plummeted to $129 million.

Non-Resident Seafood Processing Workforce

Salmon processing has always depended on a large non-resident workforce. Since salmon runs come in a large pulse, the industry operates at maximum capacities over a short period of time. Historically, non-residents have done most of Alaska's seafood processing and the dependence on non-residents is increasing. The figure on the previous page shows the percent of non-residents in the workforce for food processing, timber, and mining. The non-resident workforce in food processing (which is for the most part seafood processing) increased from 51 percent during the 1985-1988 timeframe to 71 percent for 1996-2000. While non-residents represent the majority of workers, they generally occupy the lower wage jobs. For example, during 2000, non-residents employed in food and kindred products represented about 70 percent of the workforce but only 56 percent of the total wages paid. In this study, income earned from seafood processing was for Alaska residents only.

Figure 7.
Non-Resident Workers in Alaska.

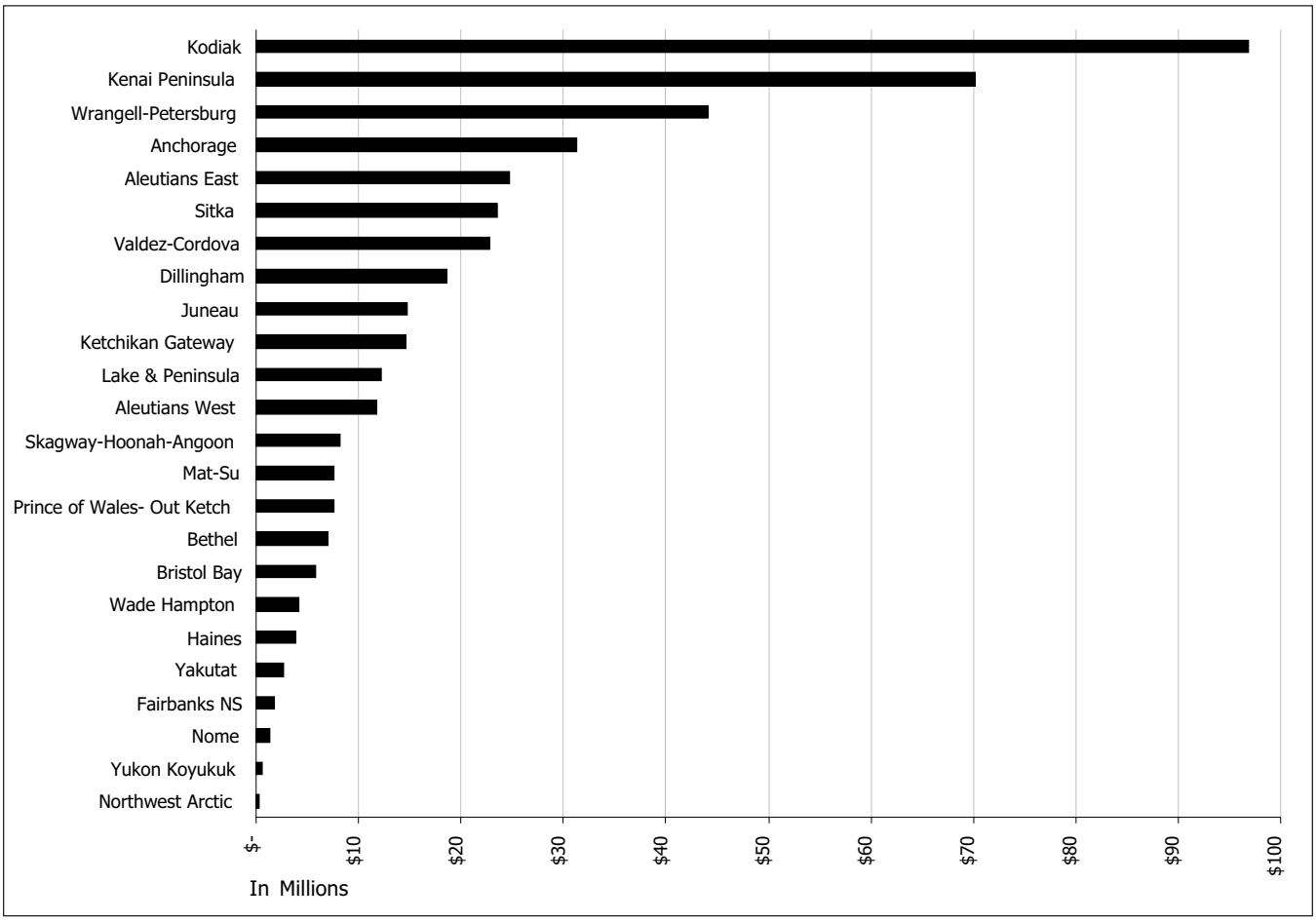


Part II: Regional Analysis

Census Areas

In this report, Alaska's 27 census areas are used to define a set of regional economies. An analysis was done for 24 of the 27 census areas. The Southeast Fairbanks, Denali Borough and North Slope Borough census areas were not analyzed, because residents do not participate in one of the state's salmon fisheries. While this report is organized, around census areas, it should be noted that there are significant economic differences among communities within a census area. For example, in the Wrangell-Petersburg Census Area, the communities of Petersburg and Kake have seafood processing facilities and support commercial fishing permits at a rate of about 10 to 14 permits per 100 population. In contrast, there are no seafood processors in the small community of Port Alexander, and nearly a five-fold greater dependence on salmon fishing, (49 permits per 100 population). The relative ranking of the 24 census areas on the basis of gross earnings from commercial fisheries is shown below.

Figure 8.
Average Commerical Fishing Gross Earnings, 1990-2002 by Residents.



Measures of Economic Dependence on the Salmon Industry

A number of economic measures were examined at the census area level. The following measures are presented as annotated charts:

Fisheries Value

- Commercial fishing gross earnings for salmon, compared to "all other species".
- The wholesale value of the salmon sold by processors compared to "all other species."
- Trends in wholesale "unit" values ($/lb) for salmon, compared to "all other species."

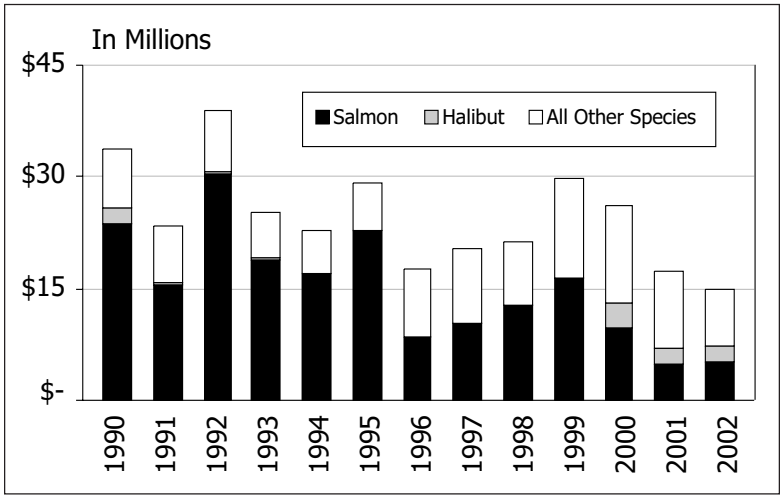
Personal Income Earned by Residents

- Personal income from salmon fishing and processing compared to personal income earned within the seafood industry as a whole.
- Personal income from salmon fishing and processing compared to the total personal income earned from all economic activity.

Aleutians East Borough

Commercial fishing and seafood processing dominate the Aleutians East Borough economy and account for 95 percent of the entire base industries. Borough salmon fisherman primarily participate in the Alaska Peninsula, Aleutian Islands, and Atka-Amlia Management Areas – collectively known as Area M. The income in the other fisheries is increasing, but only partially offsetting the losses in salmon. Average per capita wealth from 1995-1999 consisted of 81 percent cash, seven percent transfer payments (including Permanent Fund dividends) and 12 percent subsistence foods.

Figure 16.
Commercial Fishing Gross Earnings, Aleutians East Borough.



From 1975-1995, resident gross earnings from the commercial fisheries were about twice as much as they are today. The decline in salmon value is the primary difference. The charts below show the gross earnings to fishers, wholesale production by processors and trends in wholesale prices.

Decreasing price trends for other species, as well as salmon, preclude the benefits of diversification.

Statewide, 1975 was a poor salmon year. During 1975, the resident personal income from salmon was only

Figure 17.
Aleutian Peninsula Processors, Wholesale Value, Area M.

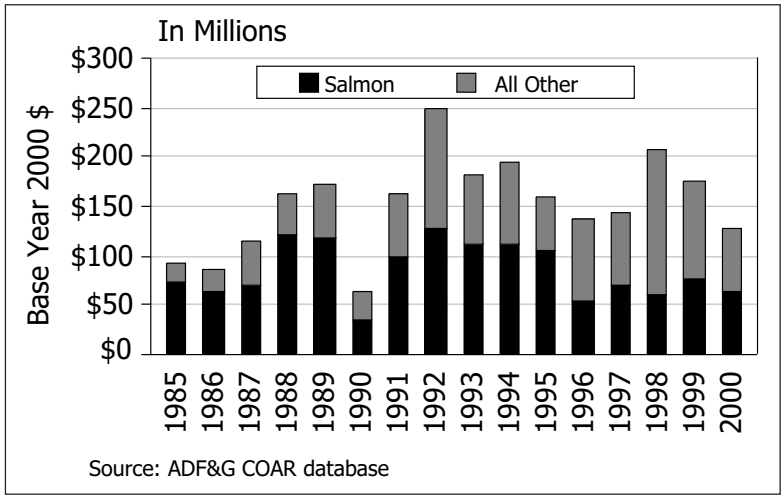


Figure 18.
Aleutian Peninsula Processors, Wholesale Unit Values for Salmon, Area M.

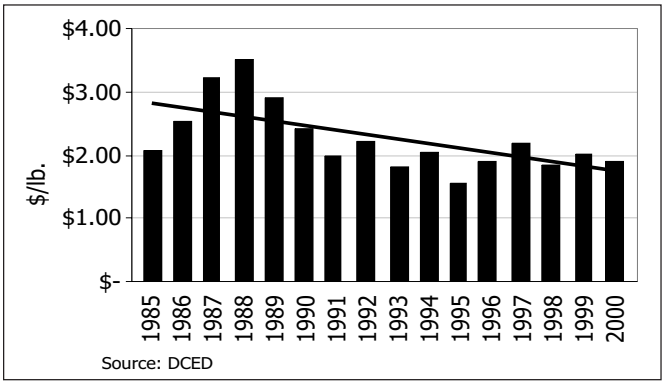
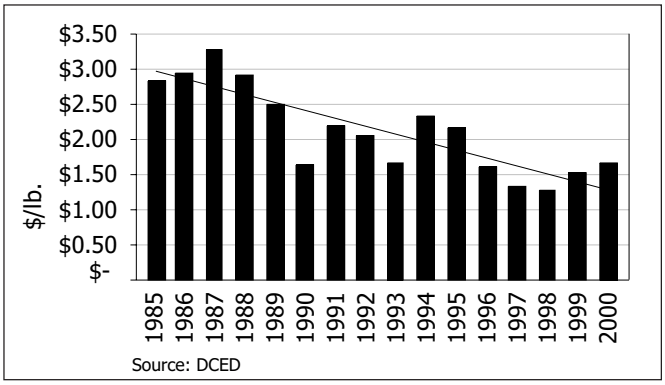


Figure 19.
Aleutian Peninsula Processors, Wholesale Unit Values for All Other Species, Area M.



24 percent of all resident income made in the entire seafood industry. This share increased over the period 1980 to 1995 and ranged from 62 percent to 80 percent. However, from 1996 to 2002, resident salmon income has dramatically decreased and now varies from 50 percent to 31 percent.

From 1975 (a very poor salmon year) the percent salmon income of total personal income was only five percent. This percentage share increased 44 percent during the period 1975 to 1995 and then dramatically decreased in 1996 to 34 percent. In 2002 the percentage share is only 8 percent. The decreased dependence on salmon is twofold: a long-term decline in salmon values due to competition with farmed salmon and the independent growth in the private support sector is due to increases in transfer payments and government spending.

The percent of resident salmon income to total personal income within the Census Area has been relatively large in the past.

Figure 20.
Percent Salmon Income of Seafood Industry Income, Aleutians East Borough.

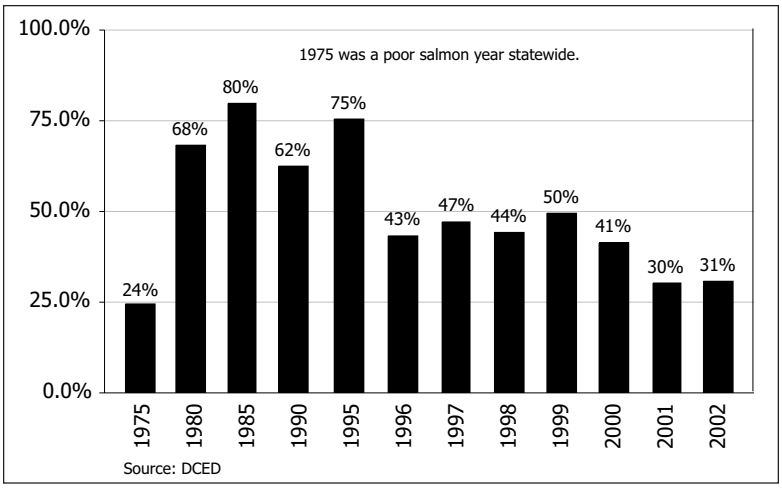


Figure 21.
Salmon Income Versus All Other Personal Income, Aleutians East Borough.

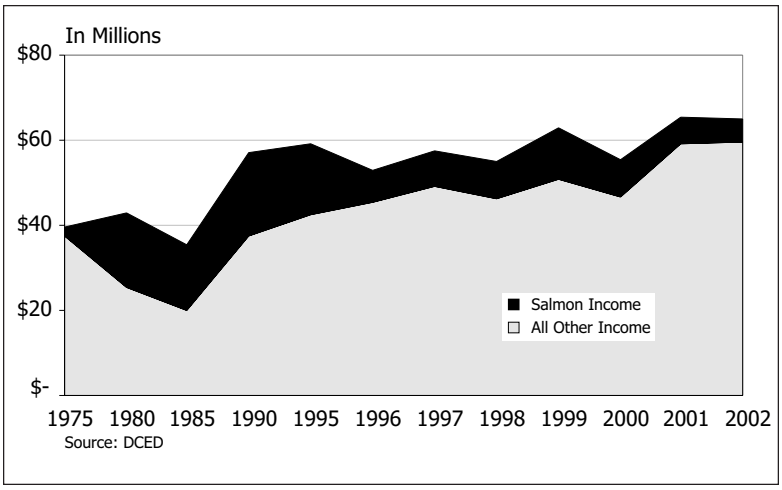
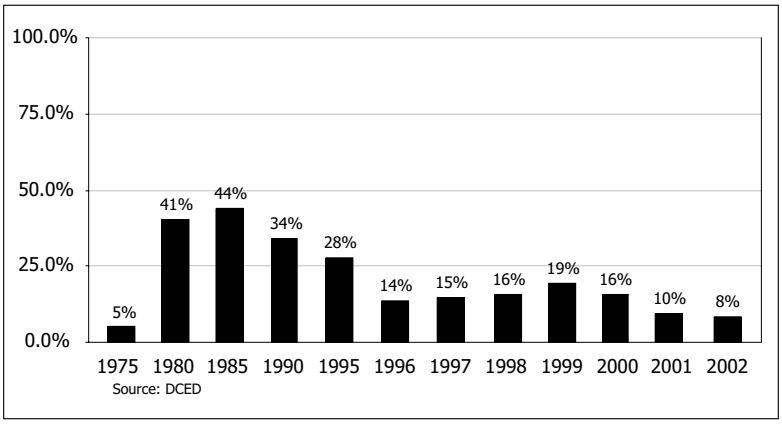


Figure 22.
Percent Salmon Income of Total Personal Income, Aleutians East Borough



Aleutians West Census Area

Commercial fishing and seafood processing clearly dominate the census area economy. The fisheries are well diversified and salmon represents a minor share although resident fishers participate in salmon fisheries in other parts of the state: Southeast Alaska, Prince William Sound, the Alaska Peninsula, the Aleutians, Bristol Bay and the Yukon River. Average per capita wealth from 1995-1999 consisted of 81 percent cash, seven percent transfer payments (including Permanent Fund dividends) and 12 percent subsistence foods.

Figure 23.
Commercial Fishing Gross Earnings, Aleutians West Census Area.

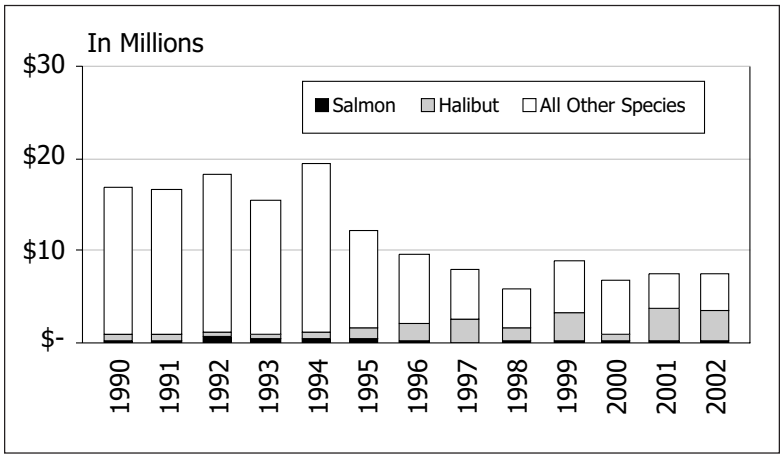


Figure 24.
Dutch Harbor Processors, Wholesale Value, Area O.

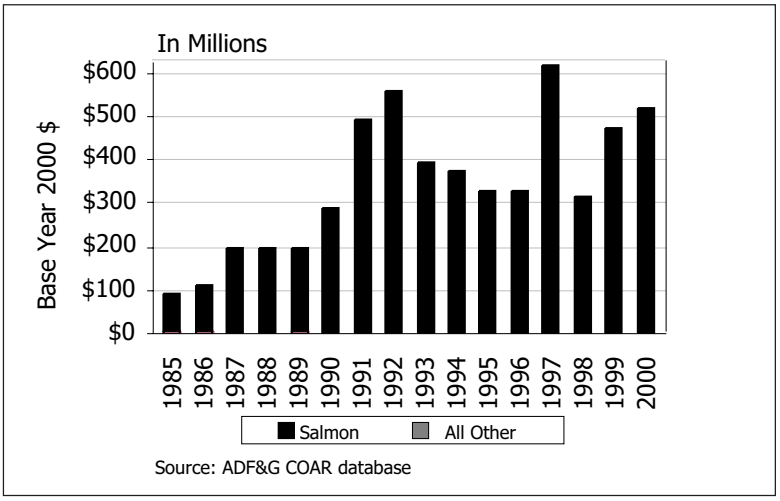
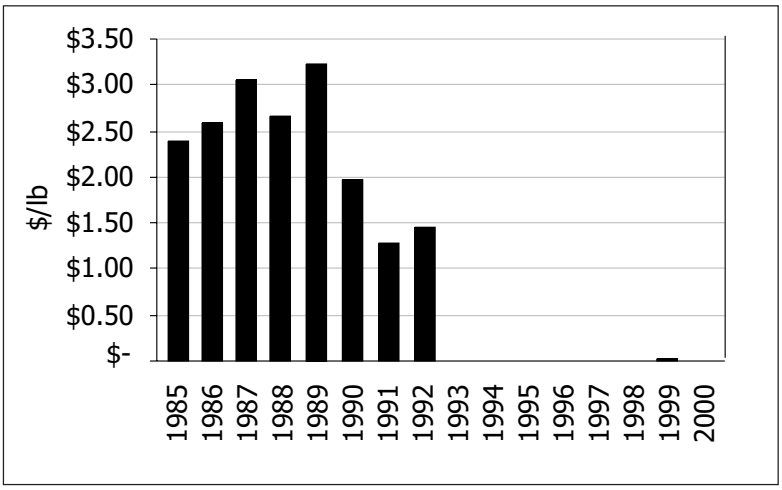


Figure 25.
Dutch Harbor Processors, Wholesale Unit Values for Salmon, Area O.



From 1975-1994, resident gross earnings from the commercial fisheries were about twice as much as they are today. The decline of the Bering Sea crab fisheries largely explain this difference. Today, the halibut and ground fisheries dominate the seafood industry, but resident participation in this lucrative fishery is small. The charts below show the gross earnings to fishermen, whole production by processors and trends in wholesale prices.

Despite decreasing price trends for salmon and other species, the seafood industry in this census area is doing reasonably well, primarily due to the rapid growth in the ground fisheries.

Since 1975, the personal income from salmon has been between one percent and six percent of all resident income earned in the seafood industry income.

The percent of salmon income of total personal income within the census area has always been miniscule, less than 2 percent and barely detectable on the chart on the next page.

Figure 26.
Dutch Harbor Processors,
Wholesale Unit Values for All Other Species, Area W.

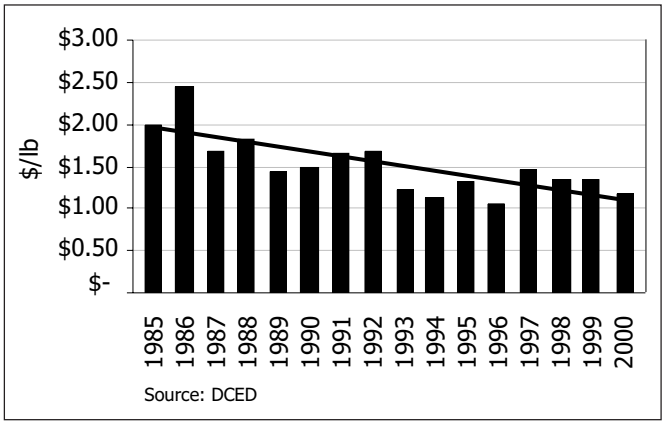


Figure 27.
Percent Salmon Income of Seafood Industry Income,
Aleutians West Census Area.

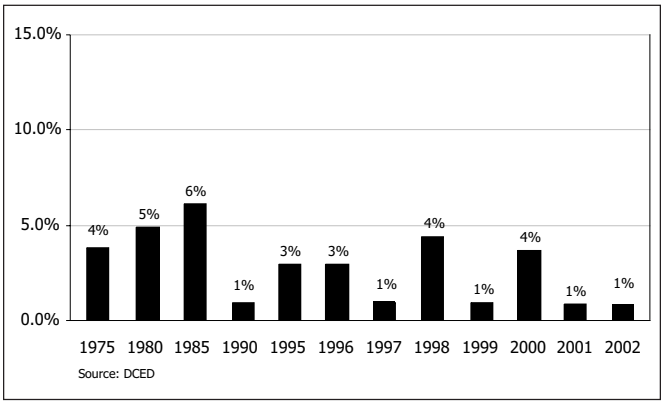


Figure 28.
Salmon Income Versus All Other Personal Income,
Aleutians West Census Area.

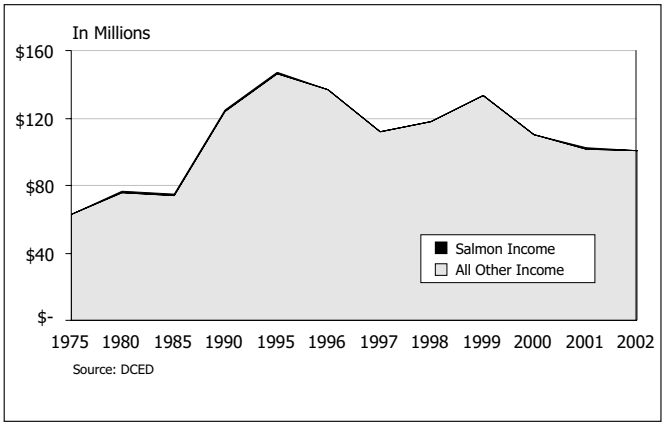
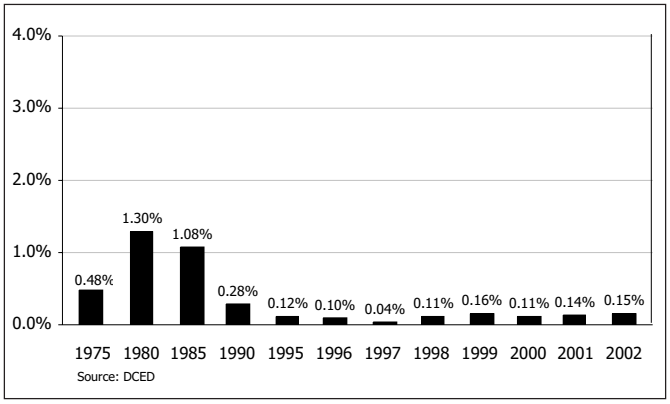


Figure 29.
Percent Salmon Income of Total Personal Income,
Aleutians West Census Area.



Anchorage (Municipality of)

Anchorage is the headquarters for many firms in the oil and gas, finance, real estate, transportation and communications industries. The Port of Anchorage, the Ted Stevens Anchorage International Airport, and the Alaska Railroad combine to make Anchorage the primary cargo distribution center in the state. Two of the fastest growing segments of the Anchorage economy are retail trade and services. Commercial fishing and seafood processing account for only five percent of the base industries. The fisheries are well diversified among salmon and other species. Like the rest of the state, fishers and processors are suffering from lower salmon prices. Average per capita wealth from 1995-1999 consisted of 86 percent cash, 13 percent transfer payments (including Permanent Fund dividends) and one percent subsistence foods.

Figure 30.
Commercial Fishing Gross Earnings, Anchorage.

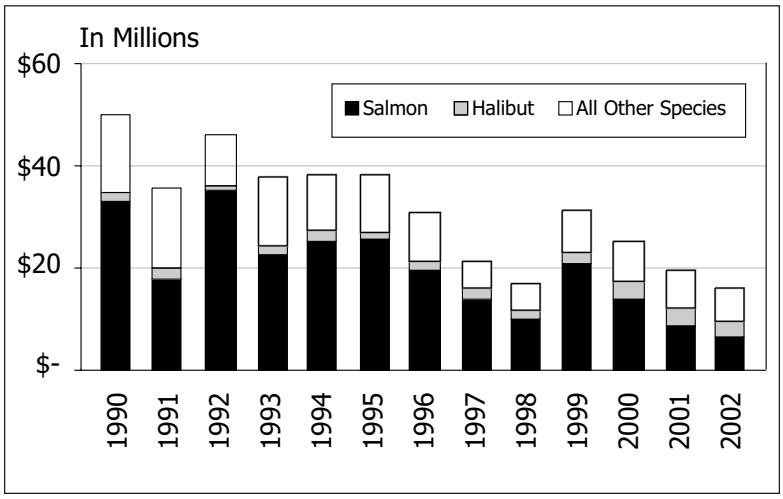


Figure 31.
Cook Inlet (Upper and Lower) Processors, Wholesale Value, Area H.

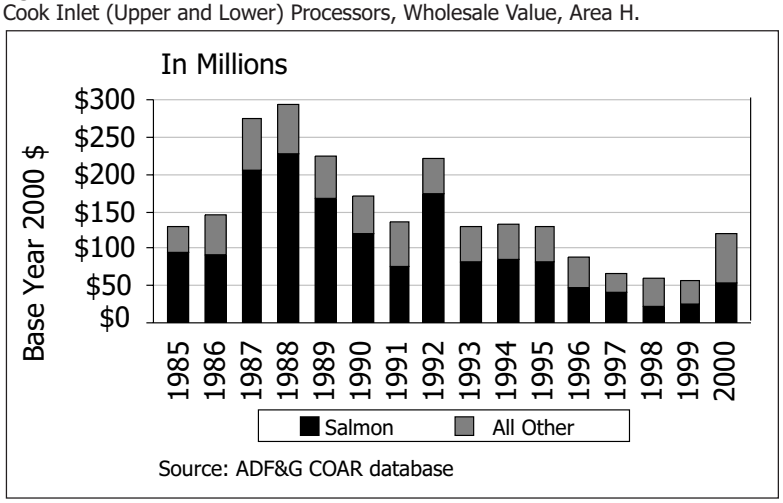
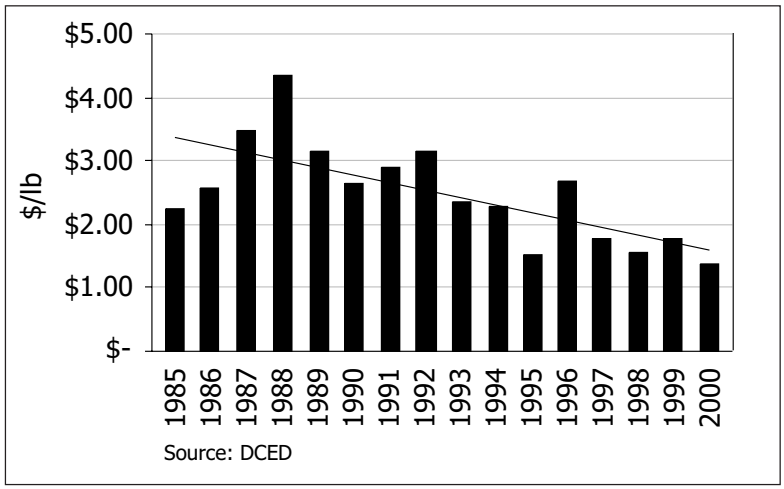


Figure 32.
Cook Inlet Processors, Wholesale Unit Values for Salmon, Area H.



About 46 percent of the Anchorage salmon fishers participate in the Bristol Bay fisheries. Another 22 percent fish Cook Inlet. The remaining 32 percent participate in many salmon fisheries throughout the state: Southeast Alaska, the Alaska Peninsula, the Aleutians, Prince William Sound, and the Yukon River. Salmon heavily dominates the commercial fisheries. Gross earnings from salmon have been decreasing since 1975 and hit an all time low in 2002. The decrease is primarily the result of falling prices due to farmed salmon and an oversupply of pink salmon. The charts on the next page show gross earnings to fishers, wholesale production by processors and wholesale price trends.

While the wholesale value of salmon is decreasing, the wholesale values for non-salmon seafood products in generally increasing. The income in the other fisheries is only partially offsetting salmon losses.

Since 1975, resident personal income from salmon has been decreasing. In 1975, personal income from salmon was 89 percent of all resident income earned in the seafood industry. This percentage dropped to 48 percent by 2002.

The percent of salmon income of the total personal income Anchorage has always been small, less than one percent.

Figure 33.
Cook Inlet (Upper and Lower) Processors, Wholesale Values for All Species, Area K.

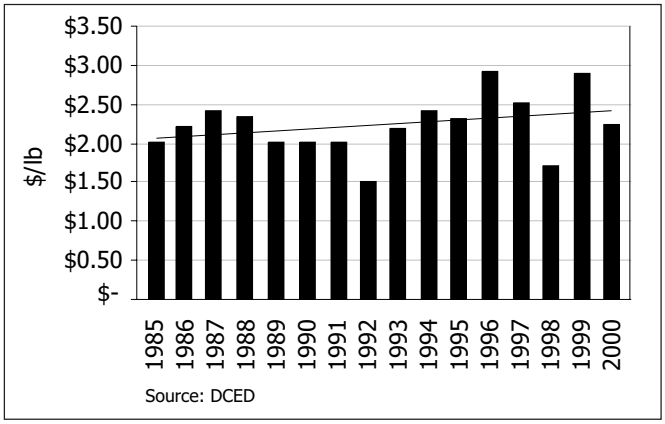


Figure 34.
Percent Salmon Income of Seafood Industry Income, Municipality of Anchorage.

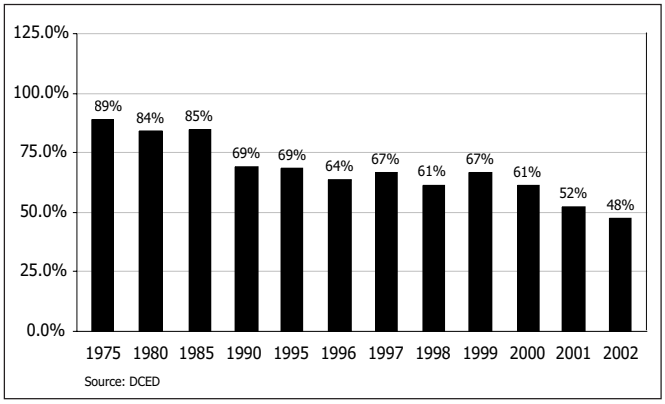


Figure 35.
Salmon Income Versus All Other Personal Income, Municipality of Anchorage.

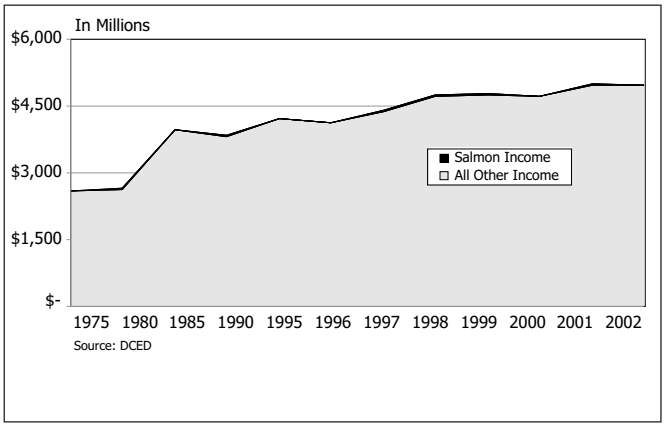
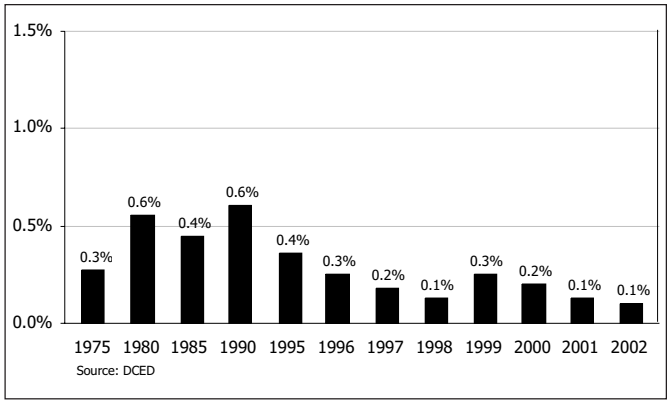


Figure 36.
Percent Salmon Income of Total Personal Income, Municipality of Anchorage.



Bethel Census Area

The cash economy of the Bethel Census Area is concentrated in the City of Bethel, an emerging regional service and retail trade hub for the Kuskokwim Delta. Health services are becoming the mainstay of the economy. Salmon fishing and processing only account for about 16 percent of the base industries in the census area. This share has ranged between eight percent and 24 percent since 1995. Average per capita wealth from 1995-1999 consisted of 45 percent cash, 19 percent transfer payments (including Permanent Fund dividends) and 36 percent subsistence foods.

Figure 37.
Commercial Fishing Gross Earnings, Bethel Census Area.

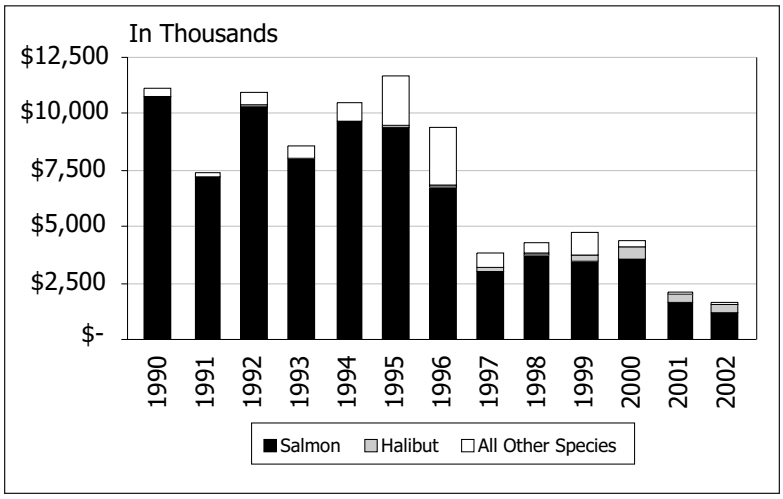


Figure 38.
Kuskokwim Processors, Wholesale Value, Area W.

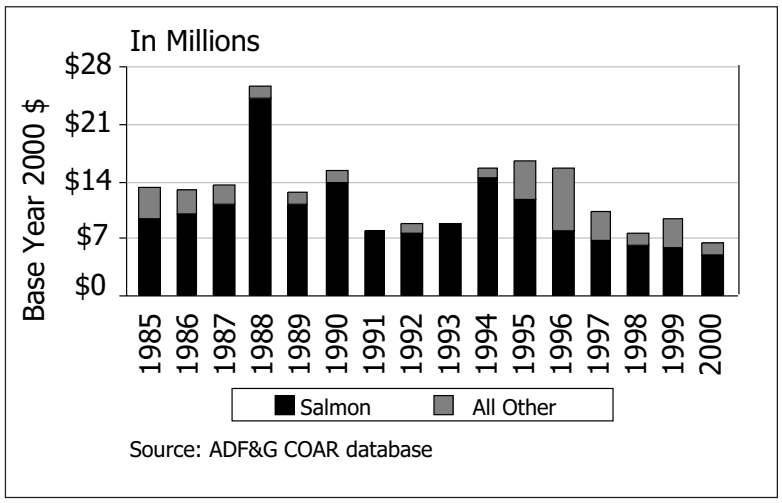
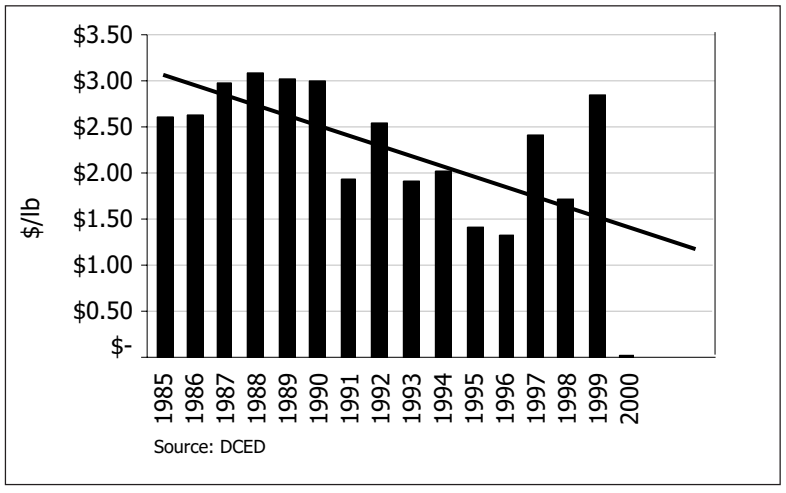


Figure 39.
Kuskokwim Processors, Wholesale Unit Values for Salmon, Area W.



Like the rest of Western Alaska, salmon runs and earnings have rapidly declined since 1996. The diversification into other fisheries remains small. The following two charts show gross earnings to fishers and the wholesale production by processors.

Participation in commercial fisheries is small and declining, dominated by salmon. Residents primarily fish Bristol Bay (83 percent), Goodnews Bay (16 percent) and the Yukon River (one percent).

Processors are facing steep downward trends in the wholesale prices for salmon and other seafood products.

From 1975 to 2002, the percent of resident personal income derived from salmon within the seafood industry has ranged from a high of 97 percent in 1980 to a low of 70 percent in 2002. This decline is due to poor salmon runs and decreasing salmon prices due to farmed salmon.

From 1975-1990, salmon income varied between two percent and five percent of the total income earned by residents. From 1995 to 2002, salmon income fell steadily from three percent to less than one percent of total income The changing measure of salmon in the overall economy is due more to changes in other base industries, such as tourism and federal government, rather than poor salmon prices.

Figure 40.
Kuskokwim Processors,
Wholesale Values for All Species, Area W.

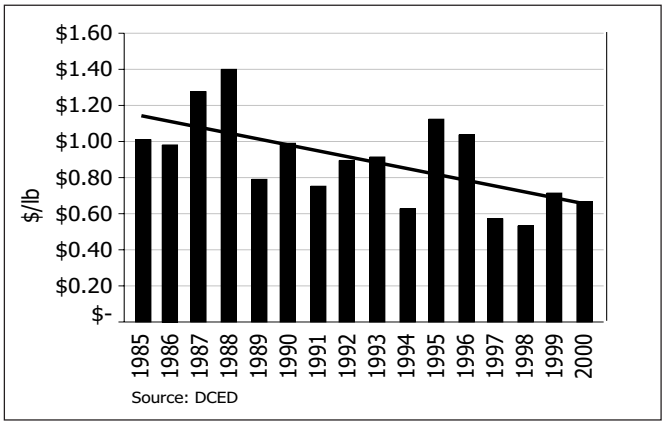


Figure 41.
Percent Salmon Income of Seafood Industry Income,
Bethel Census Area.

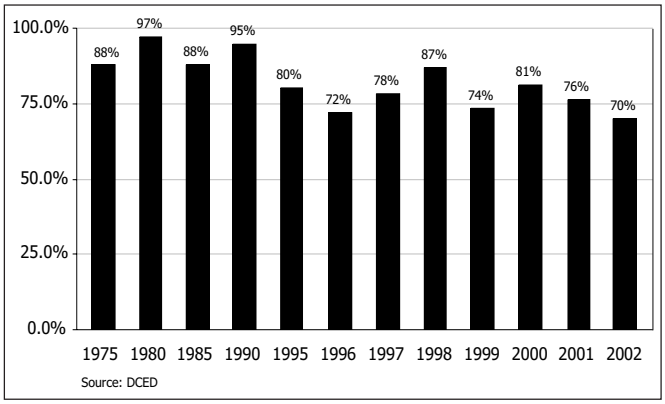


Figure 42.
Salmon Income Versus All Other Personal Income,
Bethel Census Area.

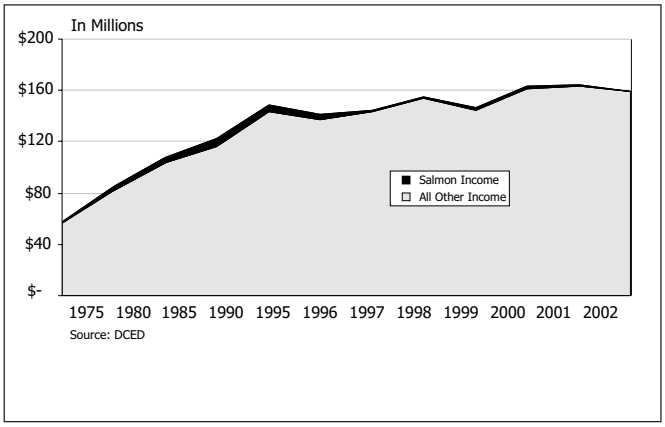
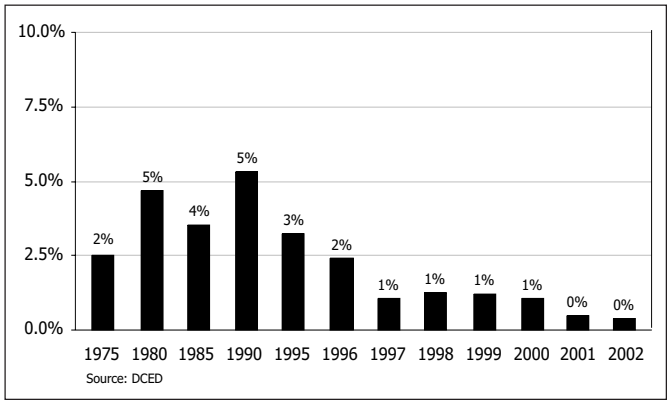


Figure 43.
Percent Salmon Income of Total Personal Income,
Bethel Census Area.



Bristol Bay Borough

The Bristol Bay Borough is geographically very small and is organized around three seafood-processing communities. Residents also rely on subsistence resources, but less than in other adjacent rural economies. During the height of the salmon season, the transient population can be triple the number of year-round residents. For 2001, salmon fishing and processing is estimated at 69 percent of base industries within the Borough. In the past, this share has varied from 52 percent to 74 percent, primarily following salmon prices, and to a lesser degree, the strength of salmon runs. Average per capita wealth from 1995-1999 consisted of 83 percent cash, ten percent transfer payments (including Permanent Fund dividends) and seven percent subsistence foods. The charts below show the gross earnings to fishers, wholesale production of producers and wholesale price trends.

Figure 44.
Commercial Fishing Gross Earnings, Bristol Bay Borough.

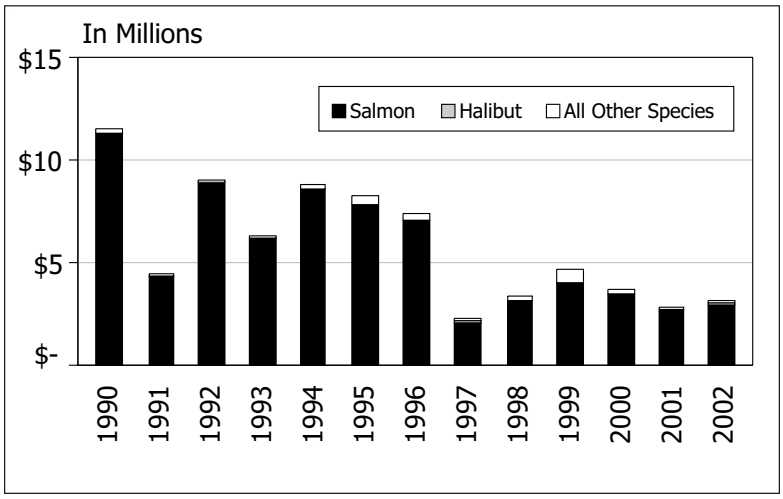


Figure 45.
Bristol Bay Processors, Wholesale Value, Area T.

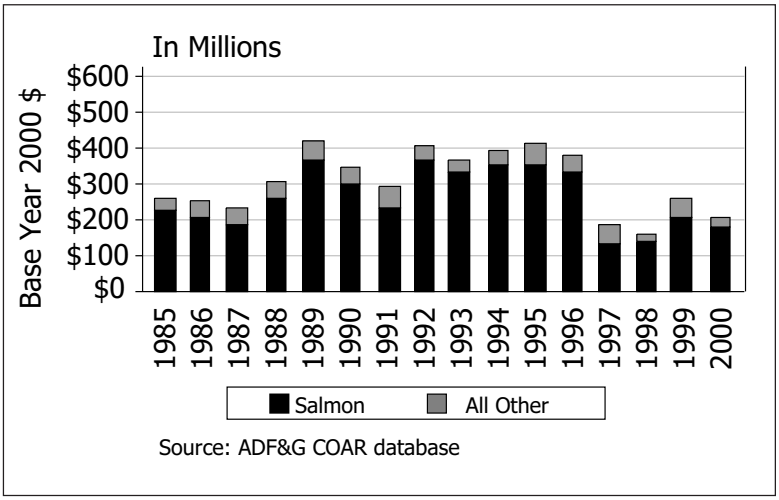
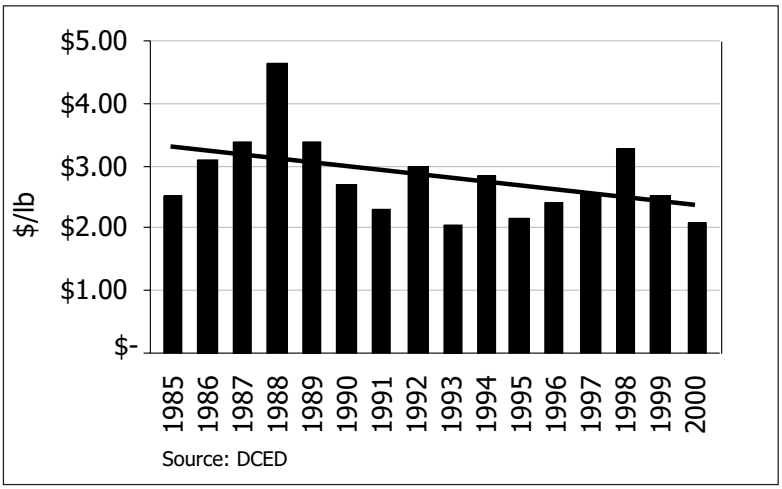


Figure 46.
Bristol Bay Processors, Wholesale Unit Values for Salmon, Area T.



Wholesale prices for both salmon and other species are decreasing.

From 1975 to 1996, income from salmon accounted for 87 percent to 99 percent of the total resident personal income earned in the seafood industry. Starting in 1997, this percent decreased slightly and now varies from 73 percent to 85 percent. This suggests that fishers are diversifying and working harder in other fisheries.

Within the entire borough economy, personal income from salmon has varied from 15 percent to 30 percent during the years 1975 to 1994. This share generally decreased from 1995 to 2002, and now varies between 6 percent and 13 percent.

Figure 47.
Bristol Bay Processors,
Wholesale Values for All Species, Area T.

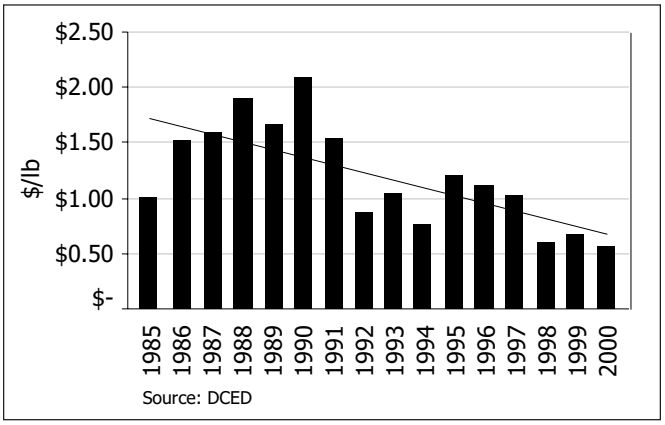


Figure 48.
Percent Salmon Income of Seafood Industry Income,
Bristol Bay Borough.

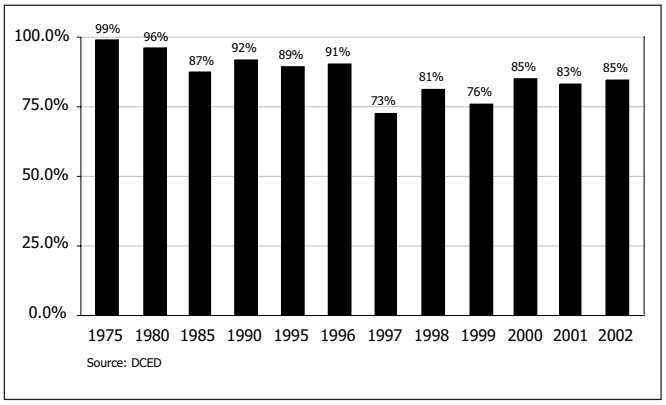


Figure 49.
Salmon Income Versus All Other Personal Income,
Bristol Bay Borough.

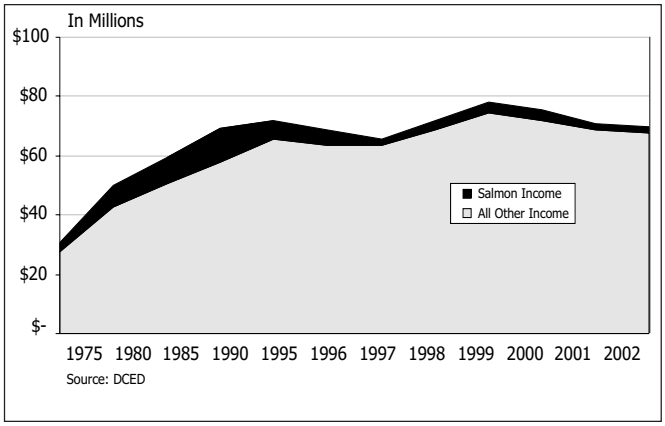
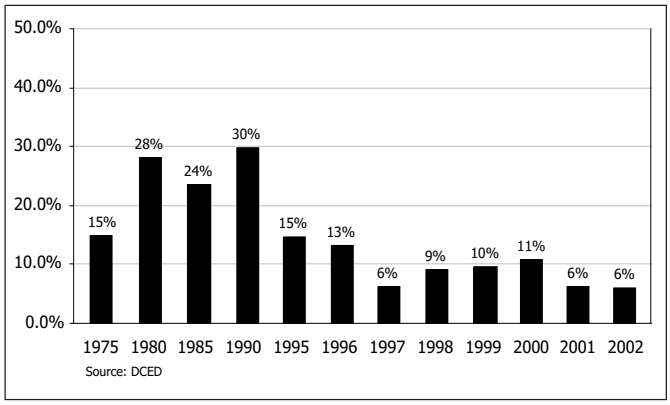


Figure 50.
Percent Salmon Income of Total Personal Income,
Bristol Bay Borough.



Dillingham Census Area

Bristol Bay salmon fishing and processing represents 86 percent of the base industries in the Dillingham Census Area. Other base industries are small, but growing and include, tourism, federal government, mining, and fur trapping. Average per capita wealth from 1995-1999 consisted of 63 percent cash, 14 percent transfer payments (including Permanent Fund dividends) and 23 percent subsistence foods.

Figure 51.
Commercial Fishing Gross Earnings, Dillingham Census Area.

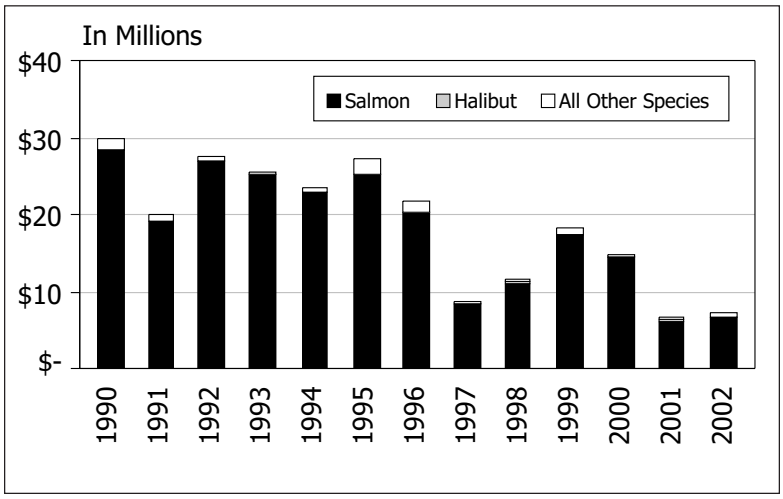


Figure 52.
Bristol Bay Processors, Wholesale Value, Area T.

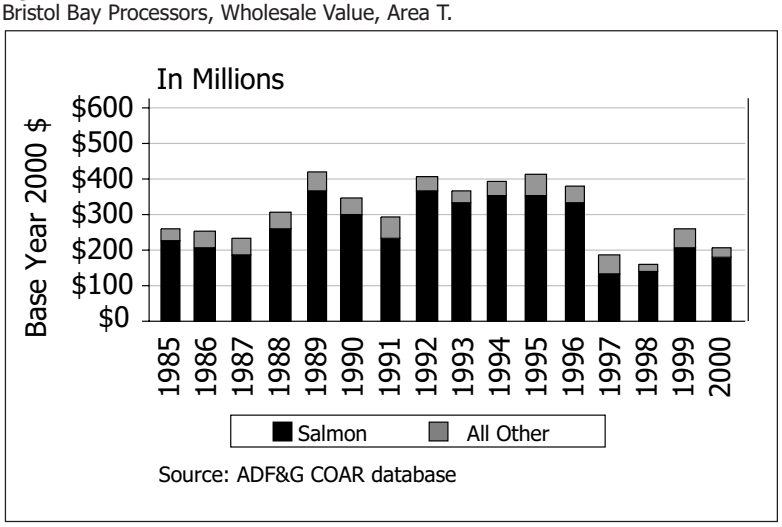
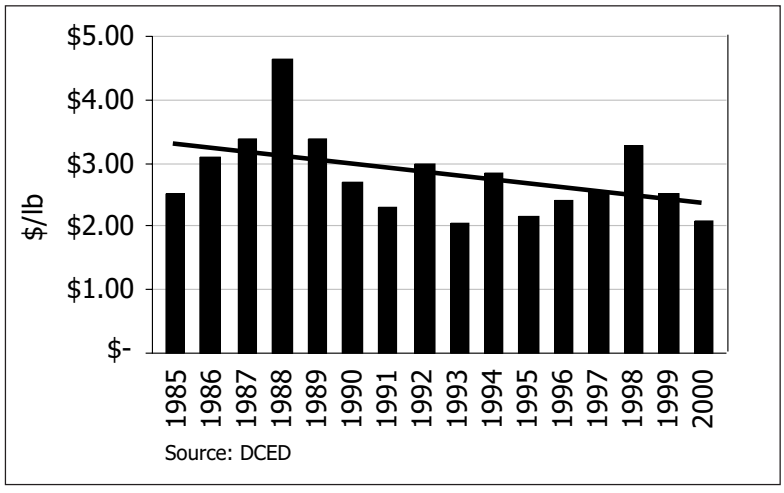


Figure 53.
Bristol Bay Processors, Wholesale Unit Values for Salmon, Area T.



The private support sector is growing despite decreases in the salmon industry. The private support sector growth is primarily in services and has been based on greater in transfer payments and other government spending. However, government spending is expected to experience a significant contraction. The combination of declines in salmon value and government spending could lead to significant difficulties for this region's economy. The charts below show gross earnings to fishermen and wholesale production by processors.

There are declining wholesale prices for both salmon and other seafood products. In fact, there is a steeper decline in prices for non-salmon products, making the diversification into the non-salmon fisheries more difficult.

From 1975 to 1999, the contribution to personal income from other fisheries was less than ten percent but increased to 20 percent in 2001-2002. This suggests that resident fishers are diversifying their fishing. Unfortunately, wholesale prices for both salmon and non-salmon products are decreasing.

Within the entire census economy, personal income from salmon has varied from 20 percent to 31 percent over the period 1975 to 1996. After 1997, personal income from salmon dramatically decreased and now is about six percent.

Figure 54.
Bristol Bay Processors,
Wholesale Unit Values for All Other Species, Area T.

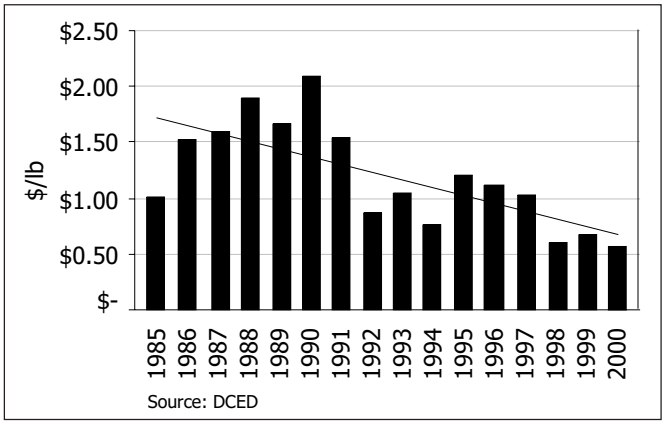


Figure 55.
Percent Salmon Income of Seafood Industry Income,
Dillingham Census Area.

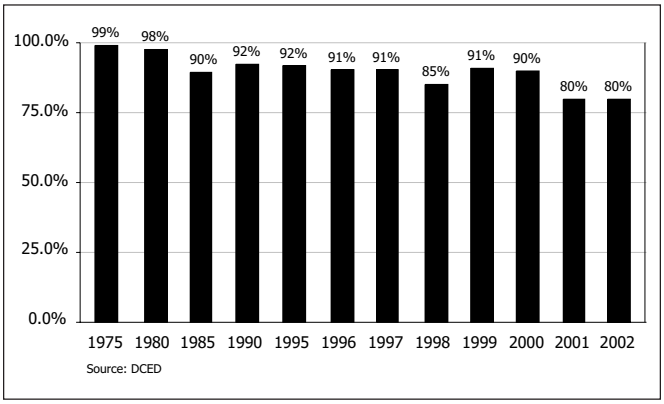


Figure 56.
Salmon Income Versus All Other Personal Income,
Dillingham Census Area.

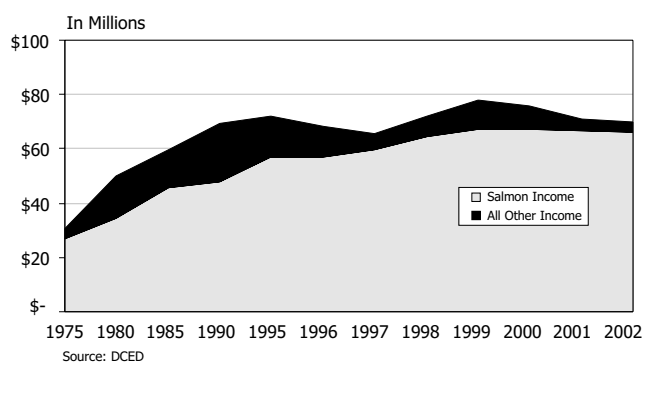
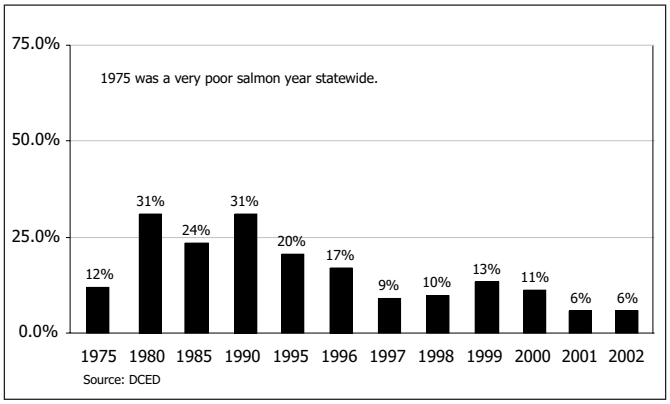


Figure 57.
Percent Salmon Income of Total Personal Income,
Dillingham Census Area.



Fairbanks North Star Borough

The Fairbanks North Star Borough's economy is largely based on providing regional services for Interior Alaska. About 50 percent of total employment is in government services, including the personnel at Eielson Air Force Base and Fort Wainwright. Since 1975, commercial fishing and seafood processing have been minimal, about .1 percent of the base industries. Average per capita wealth from 1995 to 1999 consisted of 82 percent cash, 17 percent transfer payments (including Permanent Fund dividends) and one percent subsistence foods.

Figure 58.
Commercial Fishing Gross Earnings, Fairbanks-North Star Borough.

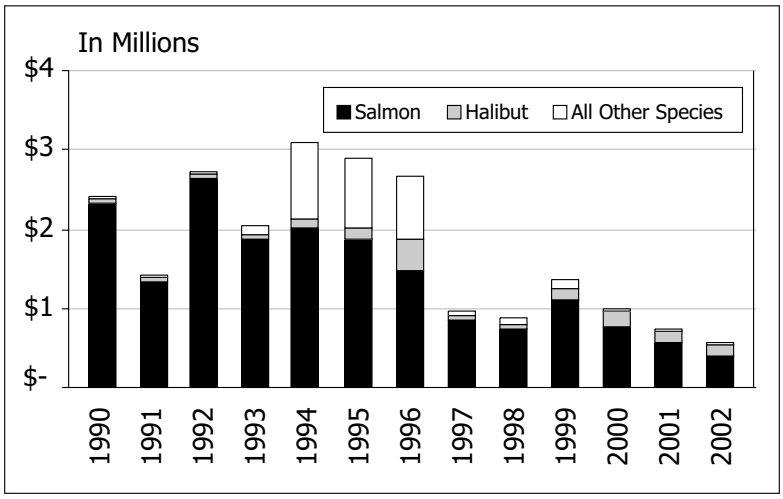


Figure 59.
Bristol Bay Processors, Wholesale Values for Salmon, Area T.

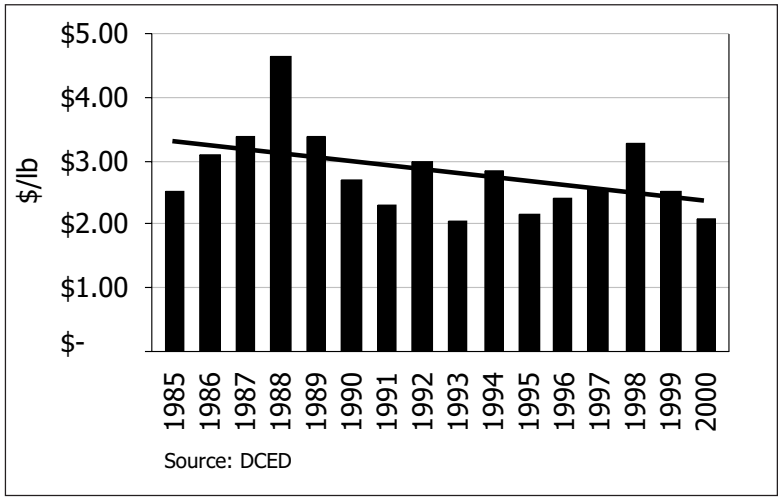
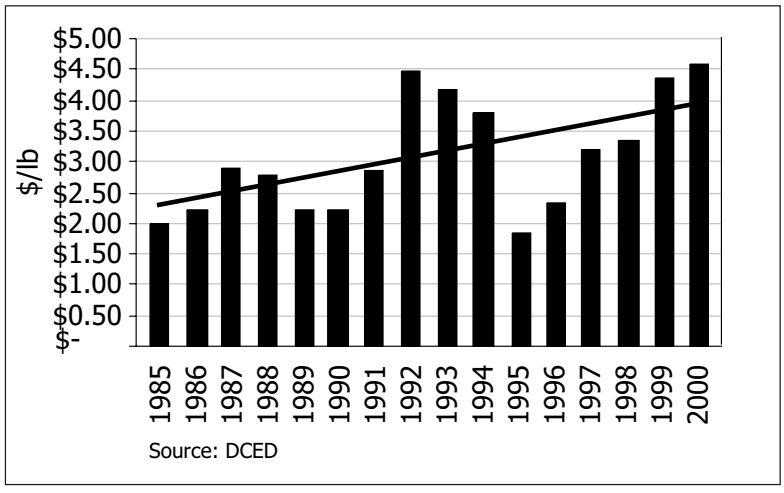


Figure 60.
Yukon River Processors, Wholesale Unit Values for Salmon, Area Y.



About 38 percent of the Fairbanks North Star salmon fishers participate in the Bristol Bay fisheries and another 32 percent fish the Lower and Upper Yukon River. The remaining 30 percent participate in many salmon fisheries around the state, including Southeast, Kodiak and Cook Inlet.

From 1975 to 1993, salmon heavily dominated the gross earnings from the commercial fisheries. From 1994 to 1996, a short but dramatic increase in herring, sablefish, and groundfish reduced the dependence on salmon. From 1997 to 2002, salmon earnings substantially declined. While fishers are diversifying into the halibut fisheries, this income only partially offsets the salmon losses. The decrease in salmon is primarily due to falling prices, due to farmed salmon and poor salmon runs in the Yukon River. The wholesale value of salmon is decreasing for Bristol Bay salmon but, ironically, is increasing for Yukon River salmon. The charts in this section show the gross earnings to fishermen and wholesale price trends.

Figure 61.
Percent Salmon Income of Seafood Industry Income, Fairbanks-North Star Borough.

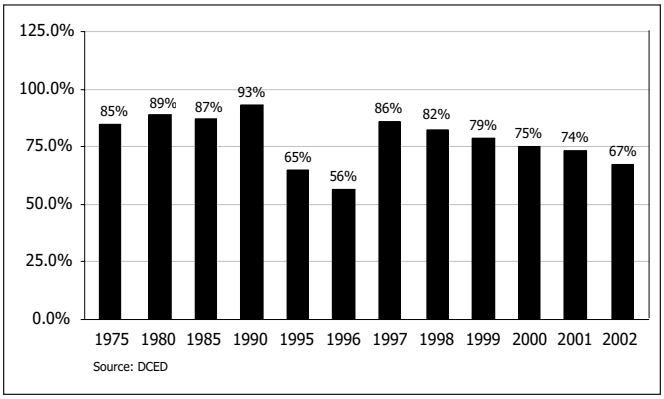


Figure 62.
Salmon Income Versus All Other Personal Income, Fairbanks-North Star Borough.

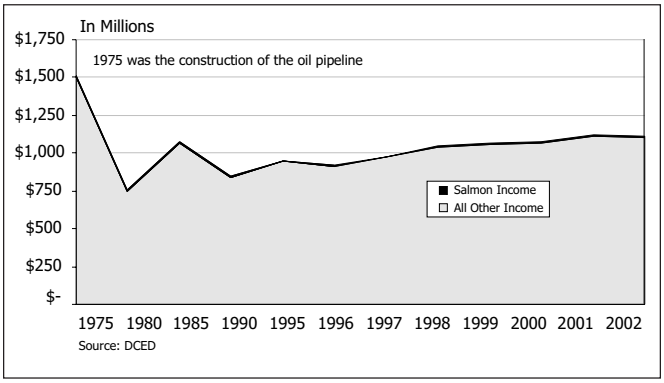
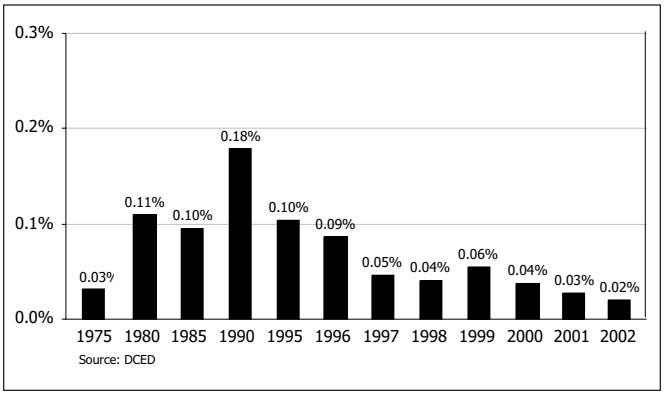


Figure 63.
Percent Salmon Income of Total Personal Income, Fairbanks-North Star Borough.



The wholesale value of salmon is decreasing for Bristol Bay salmon but is increasing for Yukon River salmon. Yukon River king salmon is one of a few salmon fisheries with a increasing price trend. Unfortunately, poor salmon runs are precluding a stable commercial fishery

From 1975 to 1990, the resident personal income from salmon ranged from 85 percent to 93 percent of all resident income earned in the seafood industry. During 1995 and 1996 the percentage dropped to 65 percent and 56 percent due to the short lived increase in other fisheries. From 1997 to 2002, resident salmon income has gradually decreased from 86 percent to 67 percent.

The percent of resident salmon income to total personal income within the Borough has always been small, less than one percent. In 2001 and 2002, the percentage share was half of a percent.

Haines Borough

The community of Haines is a major transshipment point for other Southeast communities. There are four seafood processors located in the Borough. Average per capita wealth from 1995 to 1999 consisted of 70 percent cash, 19 percent transfer payments (including the Permanent Fund dividends) and 11 percent subsistence foods.

About 62 percent of the resident salmon fishers participate in the Southeast drift gill-net fisheries.

Figure 64.
Commercial Fishing Gross Earnings, Haines Borough.

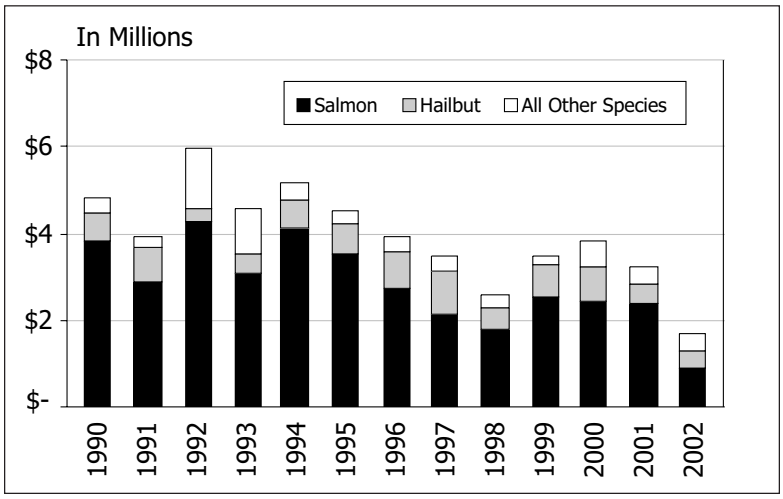


Figure 65.
Juneau-Haines Processors, Wholesale Value, Area A.

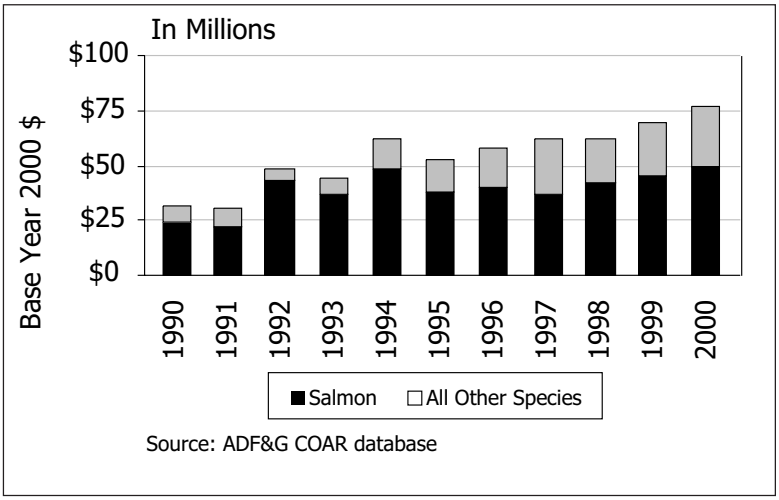
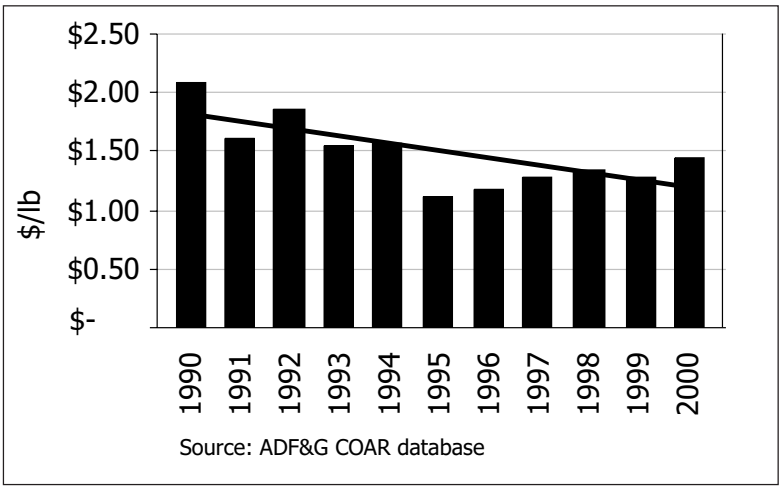


Figure 66.
Juneau-Haines Processors, Wholesale Unit Values for Salmon, Area A.



Another 28 percent participated in the power-troll and hand-troll fisheries. The remaining 10 percent fish in Bristol Bay and Cook Inlet. Resident fishers are somewhat diversified into halibut and other non-salmon species. Gross earnings from salmon have been consistently decreasing since 1994. Gross earnings from non-salmon species are variable, but have been recently decreasing since 2000. The charts below show gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

There is a declining wholesale price trend for salmon and rising price trend for other seafood products. The diversification into non-salmon fisheries has been aided by the rising price trend for other seafood. The decreased earnings from non-salmon species in recent years versus the upward trend in wholesale values, suggests that non-salmon harvests are lower than in the past.

From 1975 to 2002, the percent of personal income from salmon compared to personal income earned in the total seafood industry has generally decreased from 89 percent to 59 percent.

From 1975 to 1985, the percent of resident salmon income out of total personal income generally increased from six percent to 16 percent. The trend reversed during 1990 to 2002 and decreased to four percent in 2002. The reasons for this decrease are the rise and fall of the regional timber industry, the growth in the transportation and tourism industries and decreasing salmon prices due to farmed salmon.

Figure 67.
Juneau-Haines Processors,
Wholesale Values for All Species, Area A.

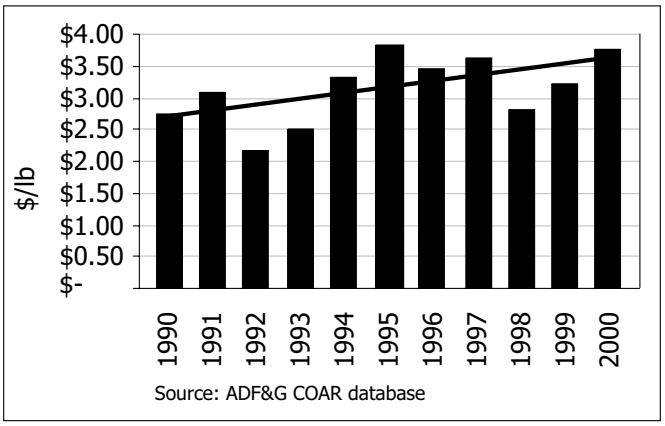


Figure 68.
Percent Salmon Income of Seafood Industry Income,
Haines Borough.

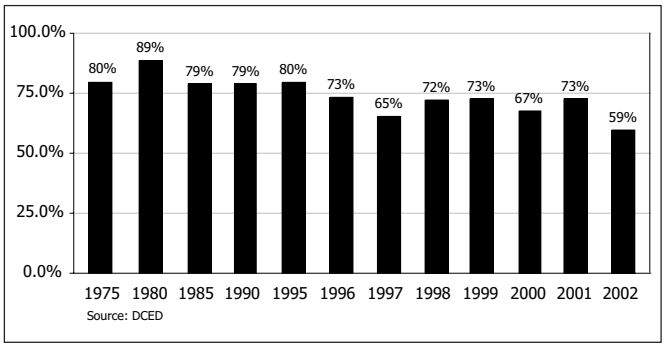


Figure 69.
Salmon Income Versus All Other Personal Income,
Haines Borough.

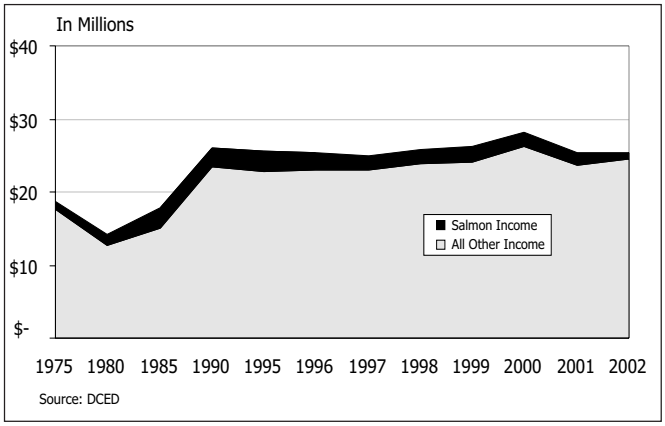
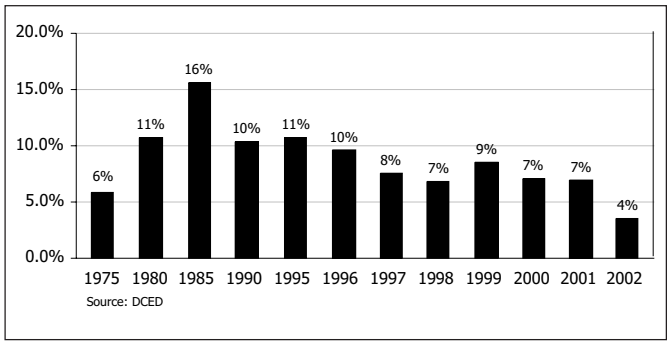


Figure 70.
Percent Salmon Income Versus Entire Census Area Economy,
Haines Borough.



Juneau Borough

Municipal, state, and federal government provides over 50 percent of the total local employment. There are 640 residents engaged in commercial fishing and seafood processing. The Kennecott-Greens Creek Mine on Admiralty Island near Juneau provides about 270 full-time jobs. Average per capita wealth from 1995 to 1999 consisted of 86 percent cash, 12 percent transfer payments (including the Permanent Fund dividends) and two percent subsistence foods.

Figure 71.
Commercial Fishing Gross Earnings, Juneau Borough.

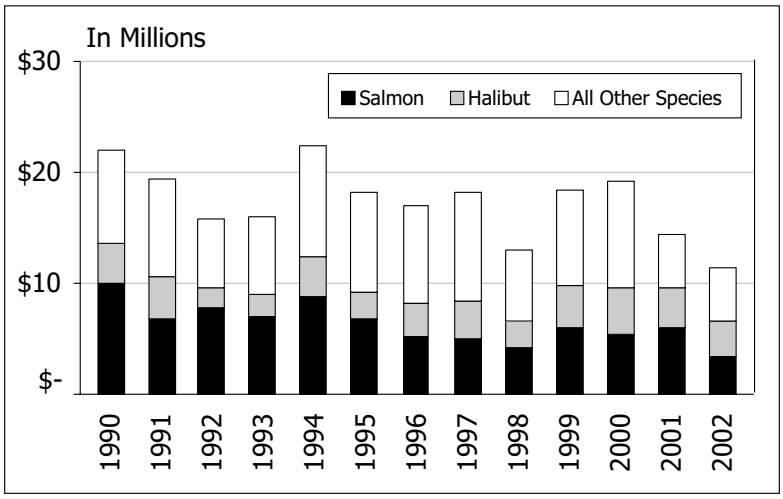


Figure 72.
Juneau-Haines Processors, Wholesale Value, Area A.

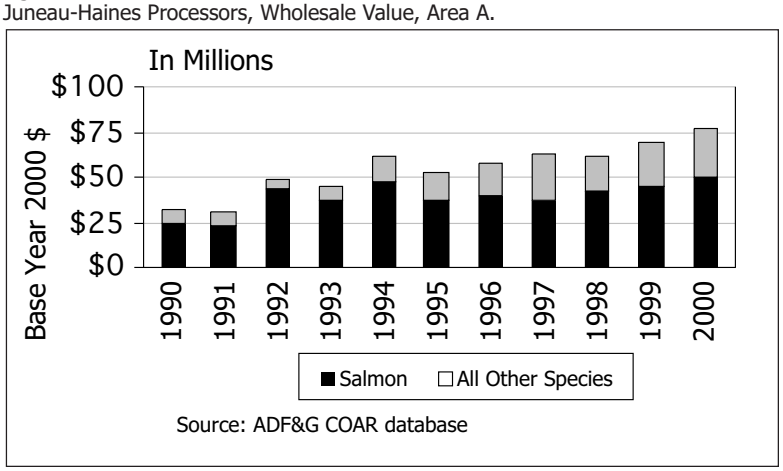
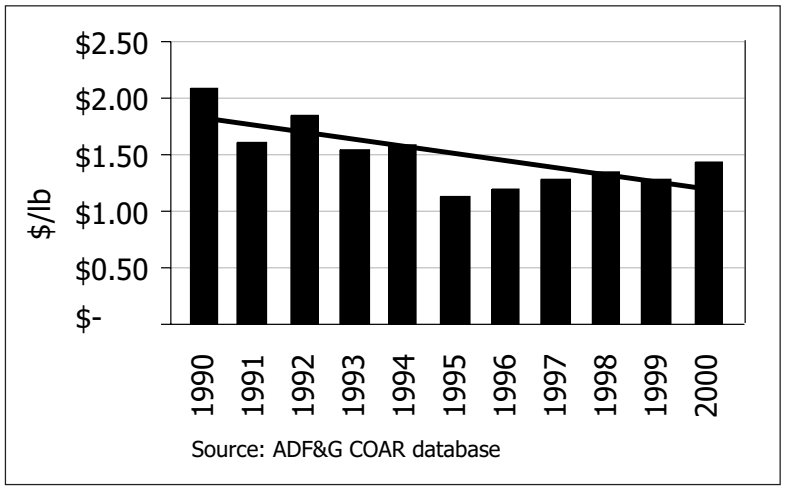


Figure 73.
Juneau-Haines Processors, Wholesale Unit Values for Salmon, Area A.



About 44 percent of the resident salmon fishers participate in the Southeast seine and drift gill-net fisheries and another 40 percent participated in the power-troll and hand-troll fisheries. The remaining 16 percent fish throughout the state: Yakutat, Kodiak, Bristol Bay, Prince William Sound, Cook Inlet and Kotzebue. Resident fishers are well diversified in halibut and other non-salmon species. The role of salmon is decreasing. Gross earnings from salmon have been generally decreasing since 1994. Gross earnings from non-salmon species are variable but decreased over the period 2001-2002. The charts in this section show gross earnings to fishers, wholesale production of processors and wholesale price trends.

There is a declining wholesale price trend for salmon and rising price trend for other seafood products. The diversification into non-salmon fisheries has been aided by the rising price trend for other seafood.

From 1975 to 1980, the personal income from salmon compared to total resident income earned in the seafood industry increased from 70 to 79 percent. From 1985 to 2002, this percentage varied form 67 to 34 percent, but generally trended downward. In 2002, the percent salmon income hit an all time low of 34 percent. There is a long-term, downward trend in the salmon wholesale values and an upward trend in the wholesale for other seafood products. The income in the other fisheries is only partially offsetting salmon losses.

The percent salmon income of total personal income with the Borough has always been small, less than one and a half percent.

Figure 74.
Juneau-Haines Processors,
Wholesale Values for All Other Species, Area A.

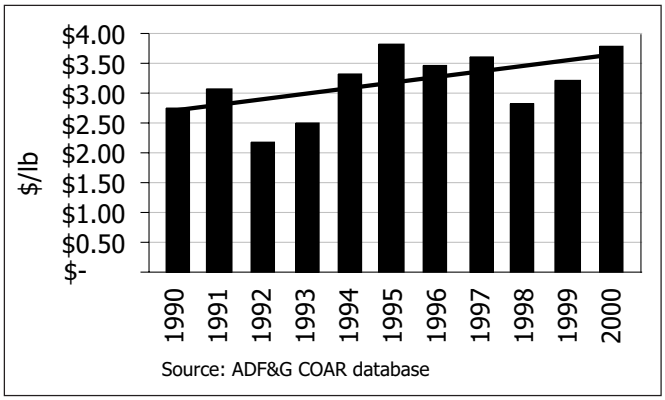


Figure 75.
Percent Salmon Income of Seafood Industry Income,
Juneau Borough.

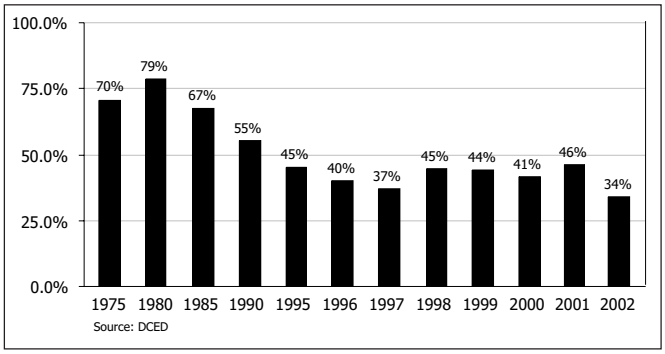


Figure 76.
Salmon Income Versus All Other Personal Income,
Juneau Borough.

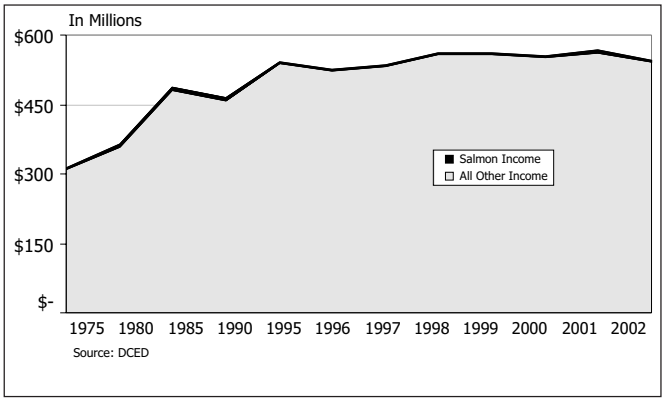
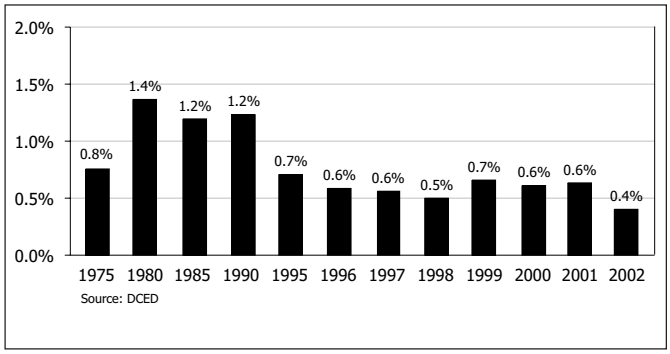


Figure 77.
Percent Salmon Income Versus Entire Census Area Economy,
Juneau Borough.



Kenai Peninsula Borough

The Kenai Peninsula Borough economy is well balanced between the oil and gas, tourism, seafood, and timber industries and a small presence of federal government. Salmon fishing and processing represents 14 percent of the base industries in the Borough. Average per capita wealth from 1995-1999 consisted of 75 percent cash, 19 percent transfer payments (including Permanent Fund dividends) and seven percent subsistence foods.

Figure 78.
Commercial Fishing Gross Earnings, Kenai Peninsula Borough.

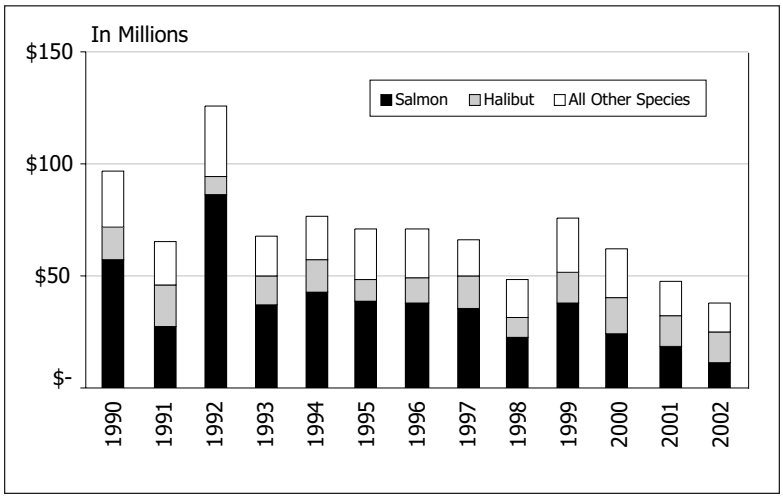


Figure 79.
Kenai Peninsula Processors, Wholesale Value, Area E.

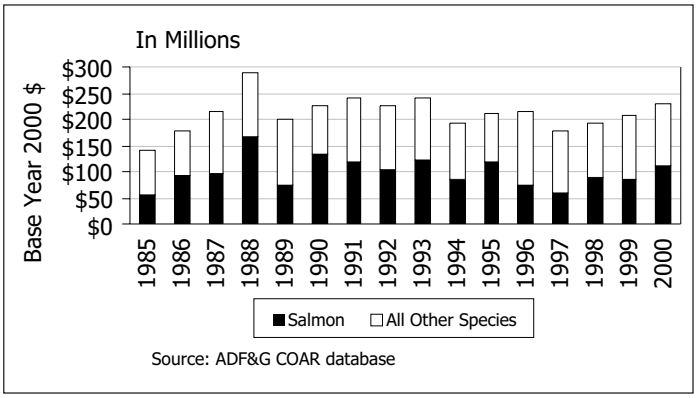
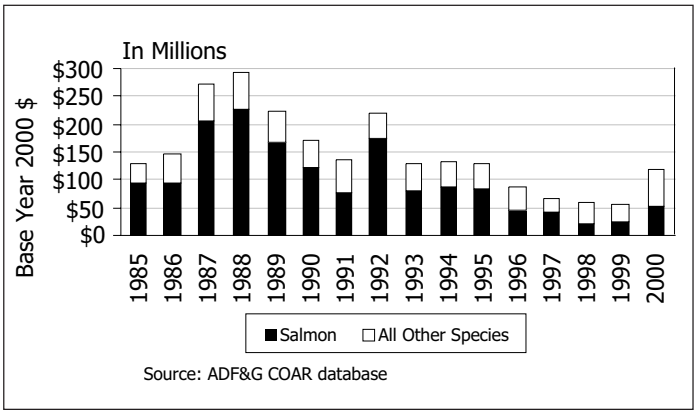


Figure 80.
Cook Inlet (Upper and Lower) Processors, Wholesale Values, Area H.



About 35 percent of the Kenai salmon fishers participate in the fisheries around Cook Inlet. Another 8 percent fish Prince William Sound and the remaining 56 percent participate in many salmon fisheries around the state: Southeast, the Alaska Peninsula, the Aleutians, Bristol Bay and the Yukon River The commercial fisheries are well diversified and until recently, salmon has accounted for about half of total gross commercial fishing earnings. Gross earnings from salmon have substantially decreased from 2000 to 2002. The decrease is due to a glut in the pink salmon market, and to a lessor extent, the falling prices due to farmed salmon. The charts below show gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

There is a declining wholesale price trend for salmon and rising price trend for other seafood products. The diversification into non-salmon fisheries has been aided by the rising price trend for other seafoods.

In 1975 and 1980, the resident personal income from salmon was about 50 percent of all resident income earned in the seafood industry. This share peaked in 1985 to 71 percent and then gradually decreased to 33 percent in 2002.

The percent of resident salmon income to total personal income within the census area has always been small. From 1975 to 1990 the percent salmon income out of total personal income ranged between one percent and two percent. Since 1990 the percentage has been less than 1 percent and in 2002 the percentage share was only a third of a percent.

Figure 81.
Prince William Sound Processors, Wholesale Values for Salmon, Area E.

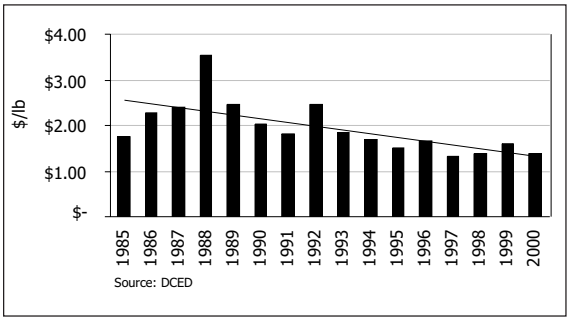


Figure 82.
Prince William Sound Processors, Wholesale Unit Values for All Other Species, Area E.

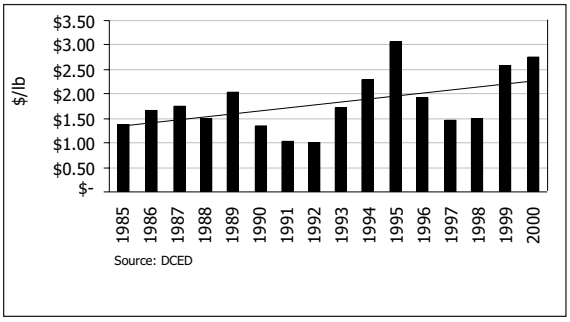


Figure 83.
Cook Inlet Processors,
Wholesale Unit Values for Salmon, Area K.

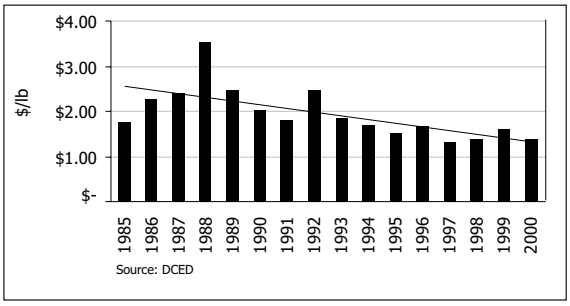


Figure 84.
Cook Inlet (Upper and Lower) Processors, Wholesale Unit Values for All Other Species, Area K.

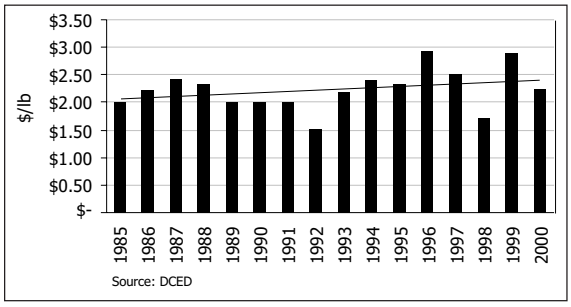


Figure 85.
Percent Salmon Income of Seafood Industry Income, Kenai Borough.

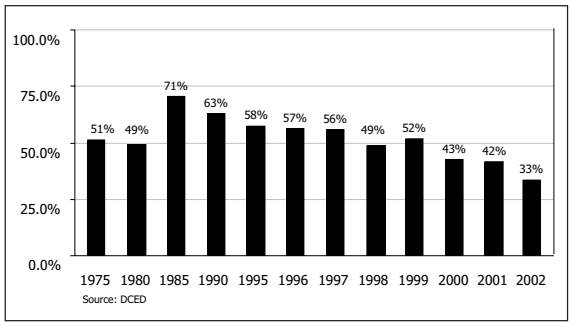


Figure 86.
Salmon Income Versus All Other Personal Income, Kenai Borough.

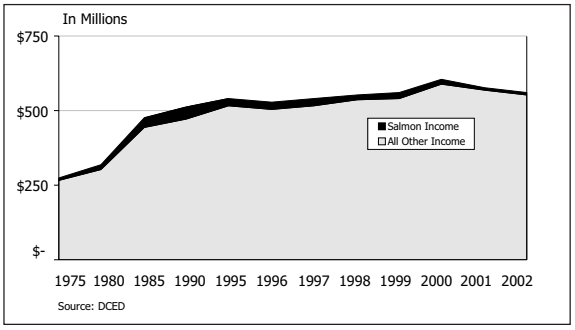
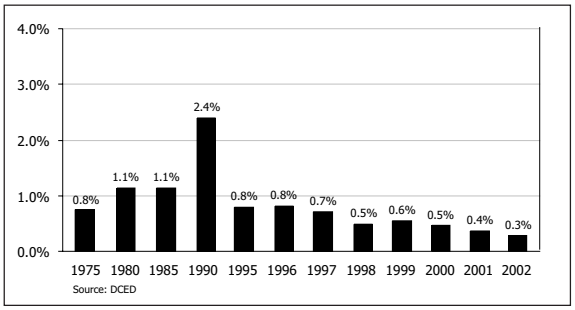


Figure 87.
Percent Salmon Income of Total Income, Kenai Borough.



Ketchikan Gateway Borough

Commercial, fishing, seafood processing, timber, tourism and the federal government are the base industries in the census area and account for 36 percent of the total economy. The Ketchikan pulp mill closed in 1997, but smaller scale timber harvesting continues. The summer months also attract as many as 500,000 tourists, many arriving aboard cruise ships. The seafood industry includes four canneries, three cold storage facilities and a fish processing plant. Average per capita wealth from 1995 to 1999 consisted of 76 percent cash, 12 percent transfer payments (including the Permanent Fund dividends) and 12 percent subsistence foods.

Figure 88.
Commercial Fishing Gross Earnings, Ketchikan-Gateway Borough.

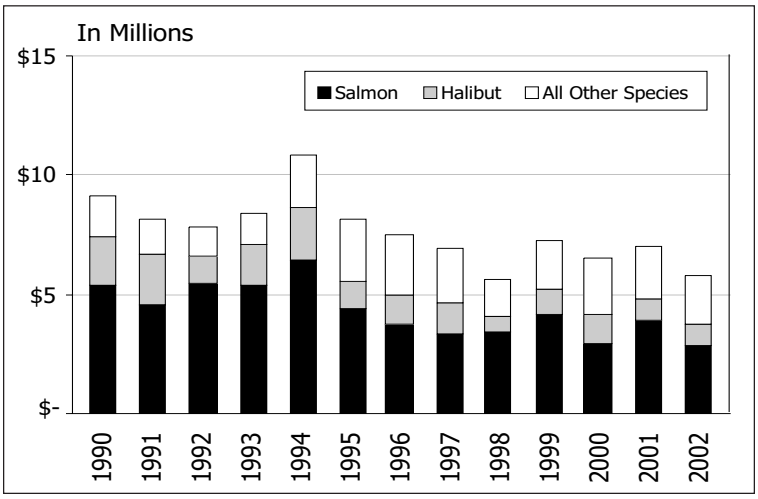


Figure 89.
Ketchikan-Craig Processors, Wholesale Value, Area B.

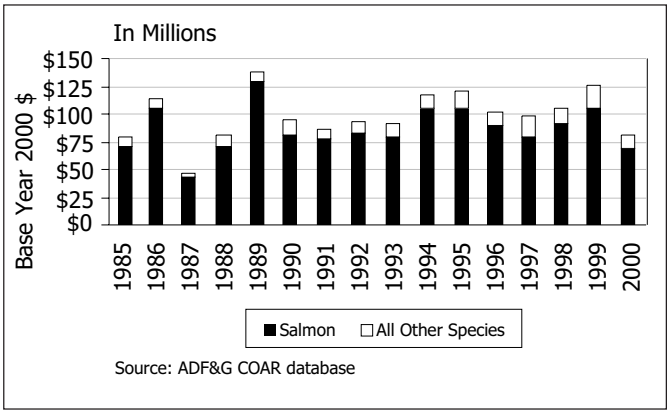
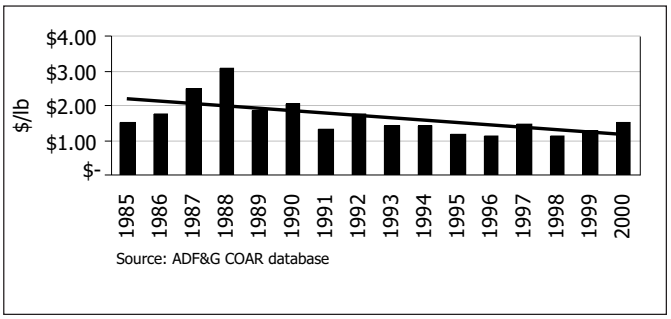


Figure 90.
Ketchikan-Craig Processors,
Wholesale Unit Values for Salmon, Area B.



About 50 percent of the salmon fishers participate in the Southeast seine and drift gill-net fisheries. Another 49 percent of the resident fishers participate in the power-troll and hand-troll fisheries. Resident fishers are fairly diversified in halibut and other species, but there is still a high dependence on salmon. Gross earnings from salmon and other species declined since 1994. The charts below show gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

There is a steep declining trend in the wholesale price for salmon and a steep rising wholesale price trend for other seafood products. The rising price trend is aiding the diversification into non-salmon fisheries.

From 1975 to 2002, personal income derived from salmon, compared to total resident income from the seafood industry, varied from 63 percent to 83 percent.

The contribution of the timber industry in the past minimized the income share of salmon. From 1975 to 1990, the personal income from salmon compared to total personal income has consistently varied in a tight range of two percent to four percent. Despite a downturn in the timber and seafood industries, growth in the private support sector has occurred. This growth is primarily due to increases in transfer payments and other government spending.

Figure 91.
Ketchikan-Craig Processors, Wholesale Unit Values for All Other Species, Area B.

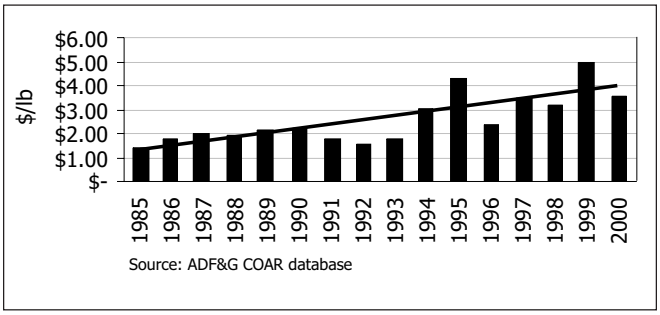


Figure 92.
Percent Salmon Income of Seafood Industry Income, Ketchikan-Gateway Borough.

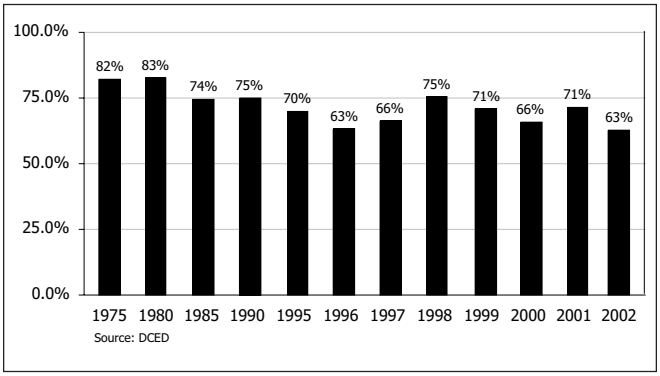


Figure 93.
Salmon Income Versus All Other Personal Income, Ketchikan-Gateway Borough

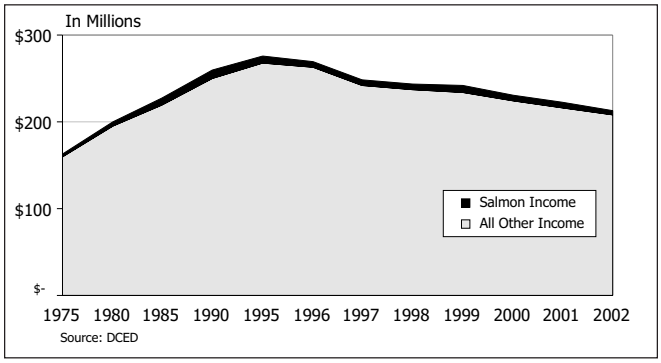
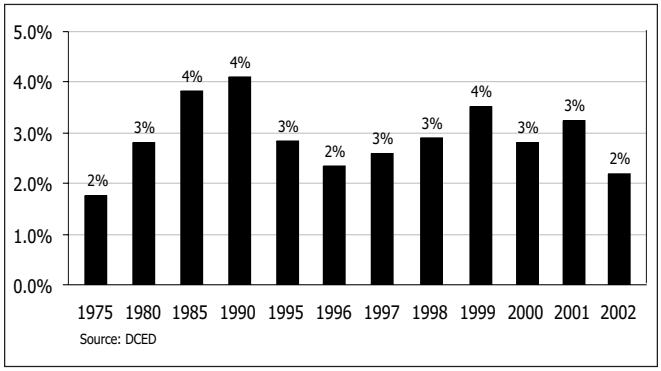


Figure 94.
Percent Salmon Income of Seafood Industry Income, Ketchikan-Gateway Borough.



Kodiak Island Borough

The economy in the Borough is dominated by commercial fishing and seafood processing. The fisheries are well diversified and the role of salmon is small. About 67 percent of Kodiak salmon fishers participate in the fisheries around Kodiak. The remaining 33 percent participate in many salmon fisheries around the state: Southeast, Prince William Sound, the Alaska Peninsula, the Aleutians, Bristol Bay and the Yukon River. Most importantly, the Kodiak commercial fisheries are well diversified around ground fish, salmon, black cod, crab and halibut. The per capita wealth from 1995-1999 consisted of 77 percent cash, 11 percent transfer payments (including Permanent Fund dividends) and 12 percent subsistence foods. The charts below show gross earnings for fishers, wholesale production of processors and trends in wholesale prices.

Figure 95.
Commercial Fishing Gross Earnings, Kodiak Island Borough, 1990-2002.

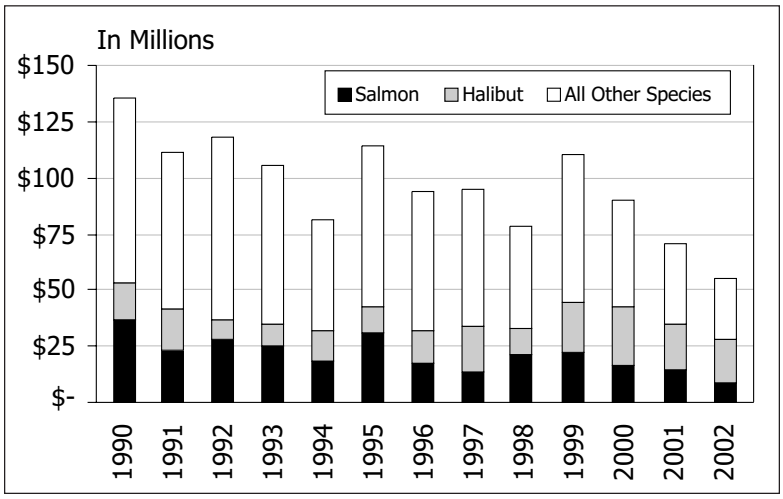


Figure 96.
Kodiak Processors, Wholesale Value, Area K.

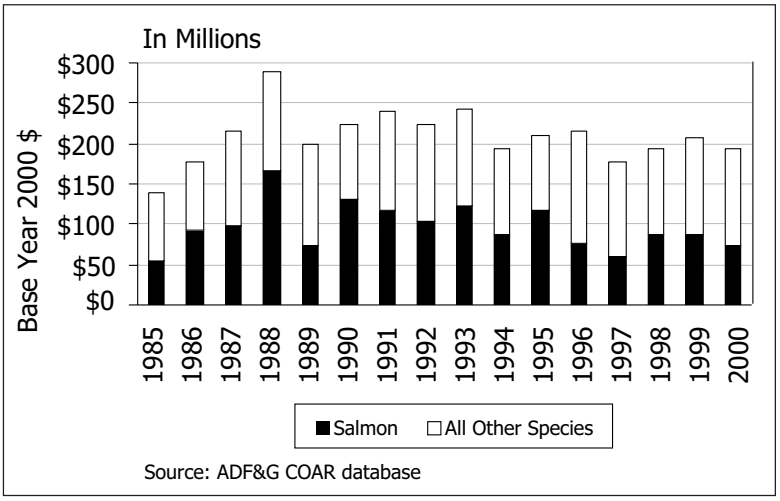
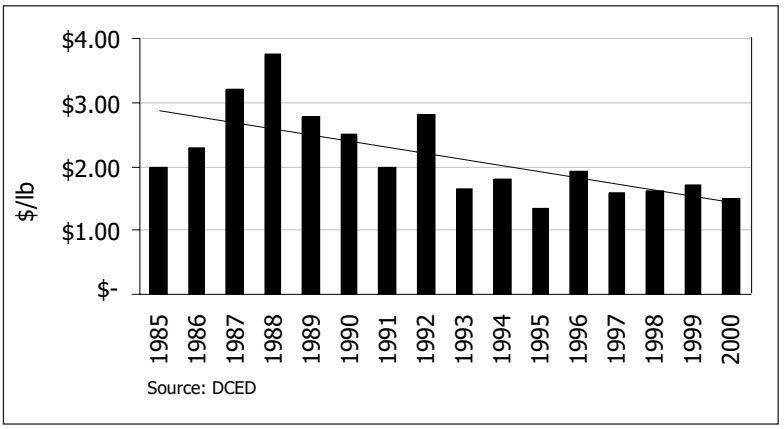


Figure 97.
Kodiak Processors, Wholesale Unit Values for Salmon, Area K.



There are downward trends in the wholesale prices for both salmon and other seafood products. Given these downward price trends, the relatively stable earnings suggest that harvest rates are increasing.

From 1975 to 1994, resident gross earnings from the commercial fisheries were about twice as much as they are today. The decline of the Bering Sea crab is the primary reason for this change. Today, the halibut and ground fisheries dominate the Borough's seafood industry. Despite decreasing price trends for salmon and other species, the seafood industry is growing through increased harvests.

In 1975 (a very poor salmon year) the percent salmon income to total personal income was only six percent. This percentage share increased to 13 percent during the period from 1980 to 1990 and then decreased six percent by 2001. In 2002 the percentage share was only 4 percent.

Figure 98.
Kodiak Processors,
Wholesale Values for All Species, Area K.

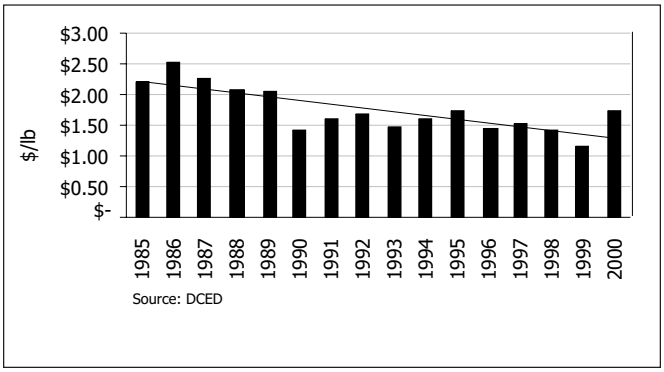


Figure 99.
Percent Salmon Income of Seafood Industry Income,
Kodiak Island Borough.

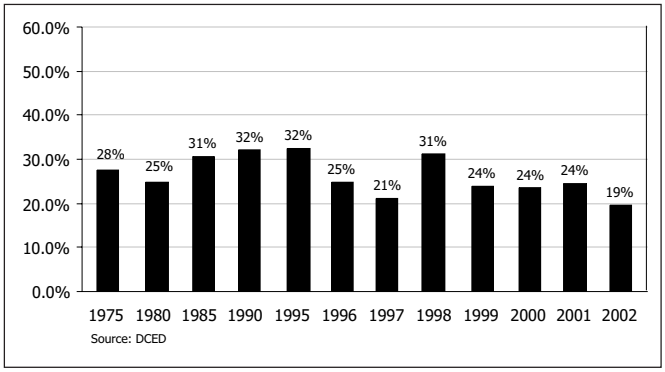


Figure 100.
Salmon Income Versus All Other Personal Income,
Kodiak Island Borough.

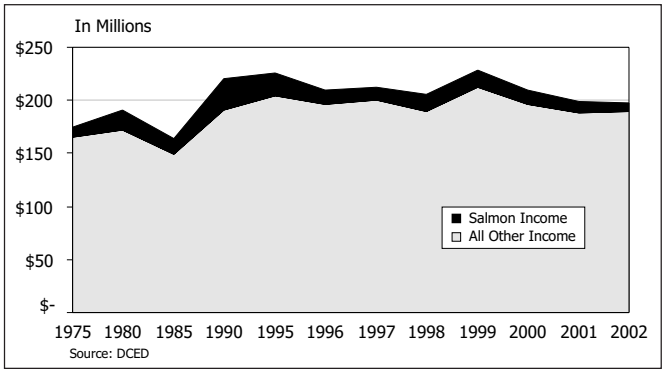
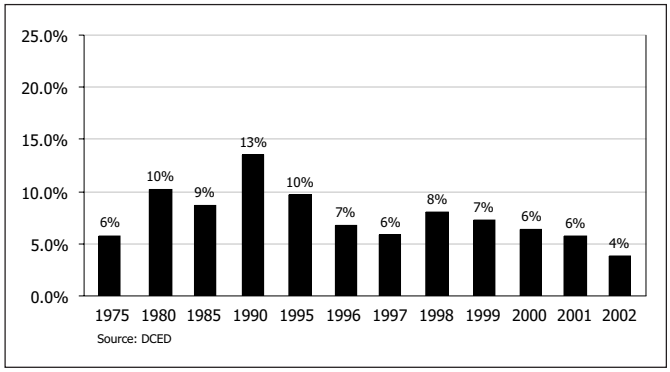


Figure 101.
Percent Salmon Income of Total Personal Income,
Kodiak Island Borough.



Lake and Peninsula Borough

The Lake and Peninsula Borough economy has a balanced mix of cash and subsistence economies. Commercial fishing and seafood processing dominate the Borough's cash economy. Salmon fishing and processing was 58 percent of base industries in 2001 and is down sharply from 73 percent in 1995. Average per capita wealth from 1995-1999 consisted of 52 percent cash, 17 percent transfer payments (including Permanent Fund dividends) and 31 percent subsistence foods.

Figure 102.
Commercial Fishing Gross Earnings, Lake and Peninsula Borough.

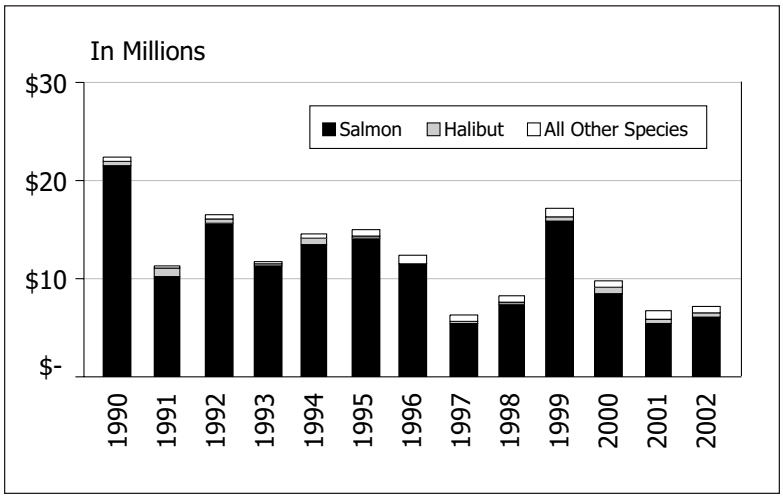


Figure 103.
Chignik Processors, Wholesale Value, Area L.

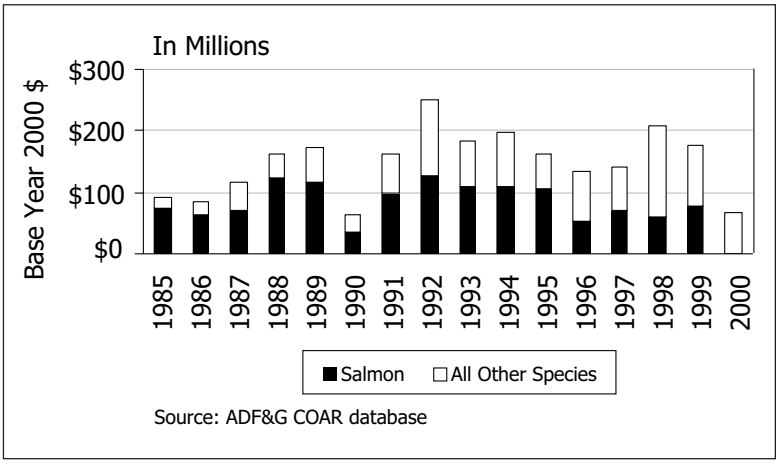
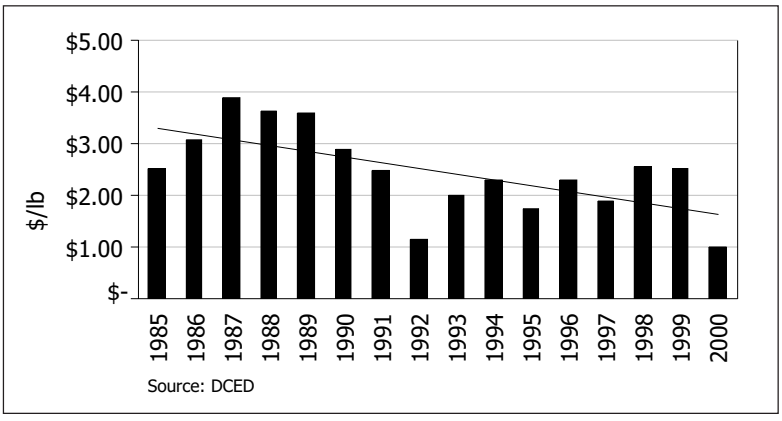


Figure 104.
Chignik Processors, Wholesale Unit Values for Salmon, Area L.



Resident salmon fishers utilize the Chignik, Bristol Bay, and Peninsula/ Aleutian (Area M) fisheries. While seafood processors are diversified into other fisheries, resident fishers are overwhelmingly dependent on salmon. From 1975 to 1995, resident gross earnings from the commercial fisheries were about twice as much as they are today. The fall in salmon values due to competition with farmed salmon is the primary difference. The charts below show gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

Wholesale price trends for salmon are in a long-term decline, while wholesale prices for non-salmon products have been volatile with an essentially flat trend.

The percent of resident salmon income to all seafood industry personal income within the Census Area has always been large, varying between 84 percent and 94 percent from 1975 to 2002.

Generally, 1975 was a poor salmon year in Alaska. During 1975, the resident personal income from salmon was only 17 percent of the total resident income in the census area. This share increased over the period from 1980 to 1990 and ranged from 44 percent to 60 percent. From 1996 to 2002, resident salmon income generally declined from 39 percent to 21 percent.

Figure 105.
Chignik Processors,
Wholesale Values for All Species, Area L.

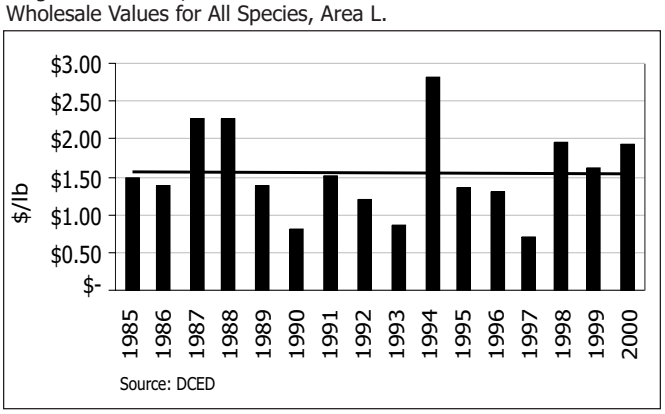


Figure 106.
Percent Salmon Income of Seafood Industry Income,
Lake and Peninsula Borough.

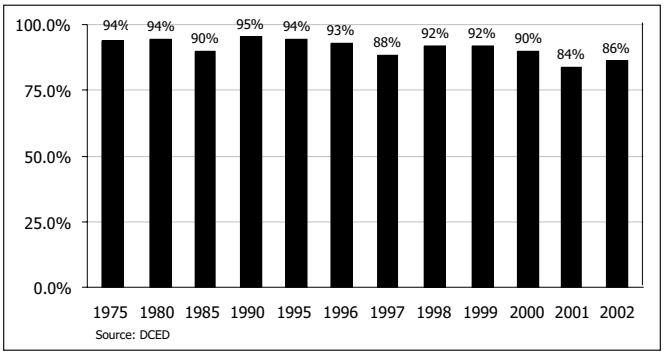


Figure 107.
Salmon Income Versus All Other Personal Income,
Lake and Peninsula Borough.

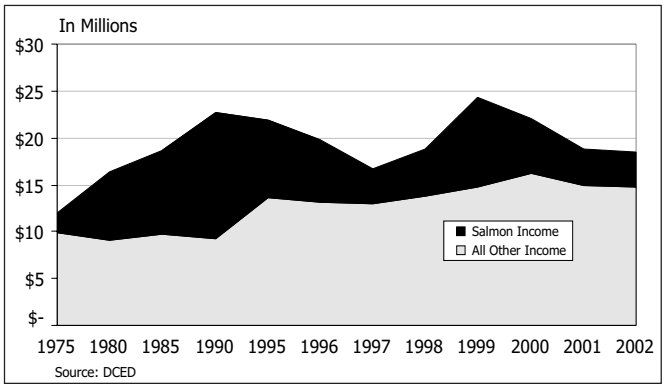
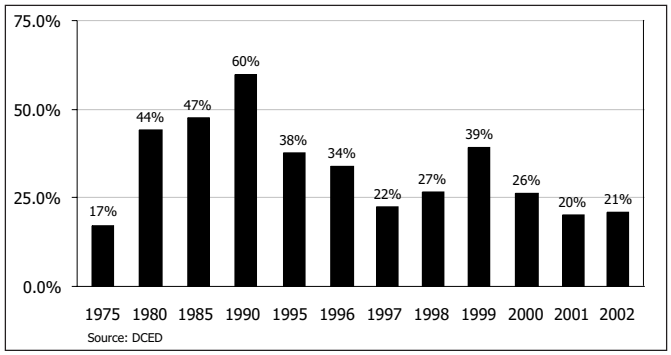


Figure 108.
Percent Salmon Income of Total Personal Income,
Lake and Peninsula Borough.



Matanuska-Susitna Borough

The Mat-Su Borough is one of the fastest growing regions in Alaska. This growth was led by increases in manufacturing, tourism, federal government and agriculture. The expansion occurred despite declines in mining and commercial fishing. Commercial fishing and seafood processing account for only five percent of the base industries. Average per capita wealth from 1995-1999 consisted of 72 percent cash, 25 percent transfer payments (including Permanent Fund dividends) and 3 percent subsistence foods.

Figure 109.
Commercial Fishing Gross Earnings, Matanuska-Susitna Borough.

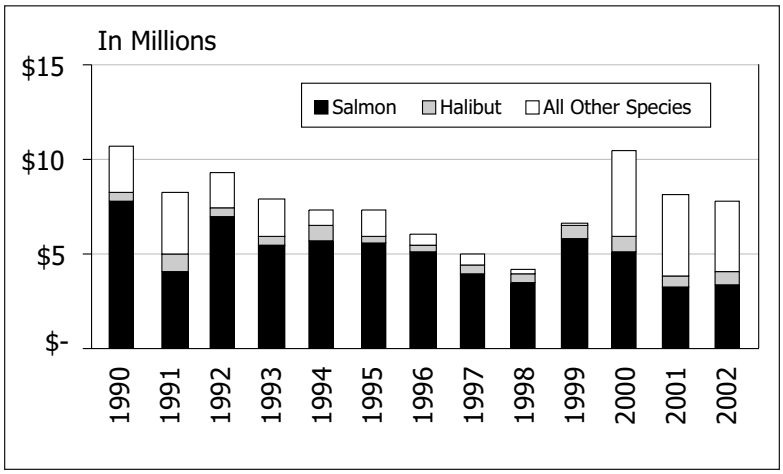


Figure 110.
Cook Inlet (Upper and Lower) Processors, Wholesale Value, Area H.

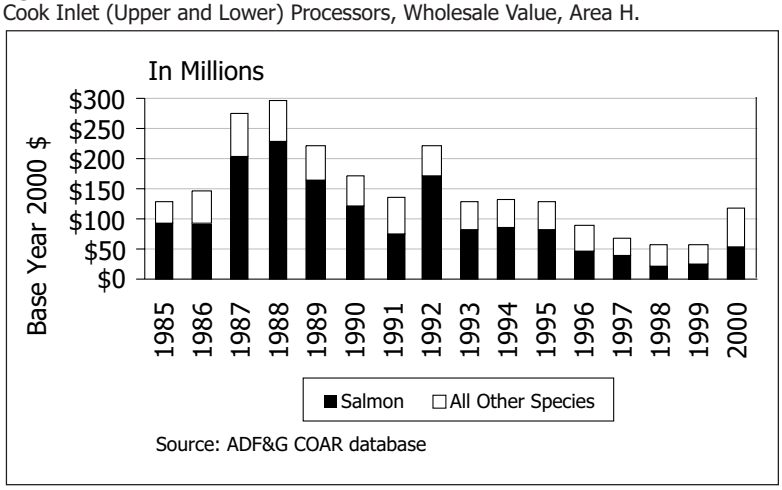
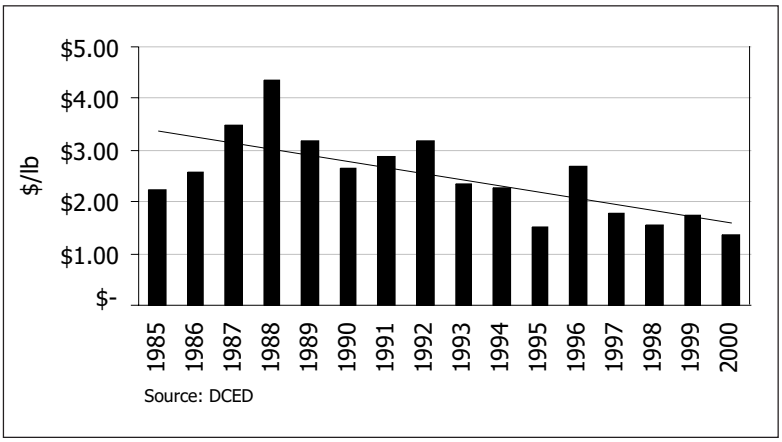


Figure 111.
Cook Inlet Processors, Wholesale Unit Values for Salmon, Area H.



The top three salmon fisheries are Cook Inlet (32 percent) Bristol Bay (25 percent) and Prince William Sound (15 percent). The remaining 28 percent participate in salmon fisheries around the state: Southeast, the Alaska Peninsula, the Aleutians, and the Yukon River. From 1990 to 1999 salmon heavily dominated the commercial fisheries. From 2000 to 2002, fishers diversified more into other fisheries and salmon now account for less than half of gross earnings. The decrease in salmon is primarily due to falling prices due to farmed salmon and an oversupply of canned pink salmon.

While the wholesale value of salmon is decreasing, the wholesale values for non-salmon seafood products in generally increasing. The income in the other fisheries is only partially offsetting salmon losses.

From 1975 to 1999, the resident personal income from salmon declined from 97 percent to 73 percent of all resident income earned in the seafood

industry. From 2000 to 2002, resident salmon income has dramatically decreased and now varies between 39 percent to 49 percent.

The percent of resident salmon income of total personal income has always been small, between half of a percent to two percent. The decreased dependence on salmon is the result of two factors: (1) the growth in manufacturing, tourism, federal government, agriculture growth retail trade and services and (2) a long-term decline in salmon values due to competition with farmed salmon.

Figure 112.
Cook Inlet (Upper and Lower) Processors,
Wholesale Values for All Species, Area K.

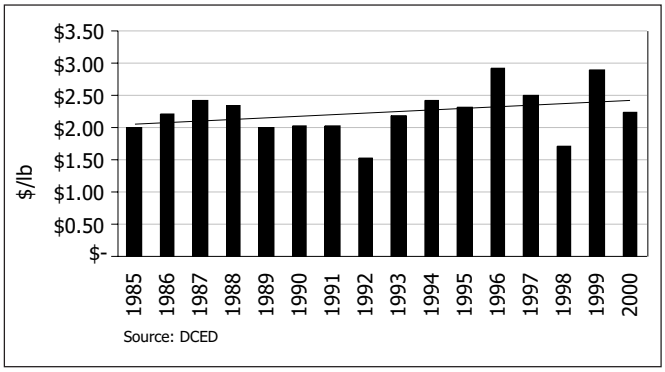


Figure 113.
Percent Salmon Income of Seafood Industry Income,
Matanuska-Susitna Borough.

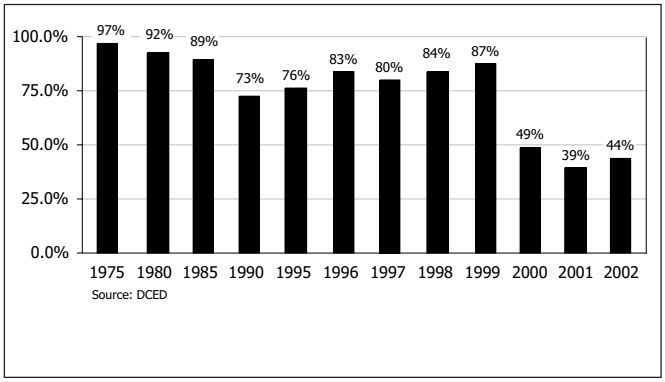


Figure 114.
Salmon Income Versus All Other Personal Income,
Matanuska-Susitna Borough.

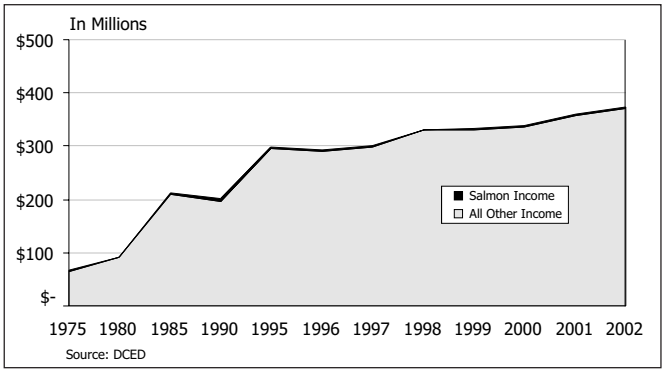
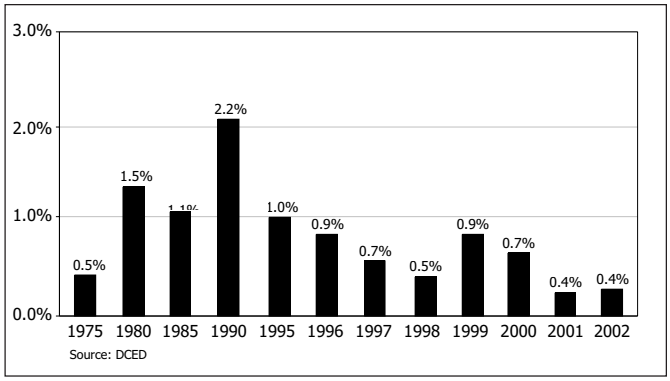


Figure 115.
Percent Salmon Income of Total Personal Income,
Matanuska-Susitna Borough.



Nome Census Area

The economic base of the Nome Census Area is small (17 percent of the total economy) and consists of commercial fishing, fish processing, mining, reindeer herding, musk ox herding, Native arts, tourism, fur trapping and a small federal government presence. Mining in the region is down due to declining gold prices. Offsetting these decreases somewhat is increased income from the tourism industry, fur trapping and Native arts. Average per capita wealth from 1995 to 1999 consisted of 53 percent cash, 20 percent transfer payments (including the Permanent Fund dividends) and 27 percent subsistence foods.

Figure 116.
Commercial Fishing Gross Earnings, Nome Census Area.

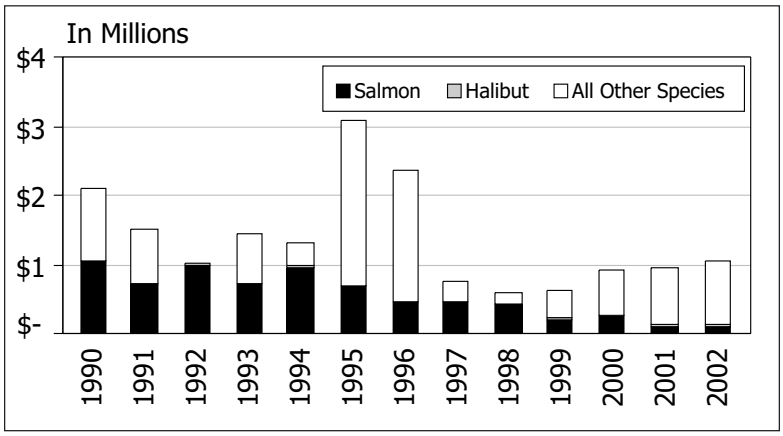


Figure 117.
Norton Sound Processors, Wholesale Value, Area Z.

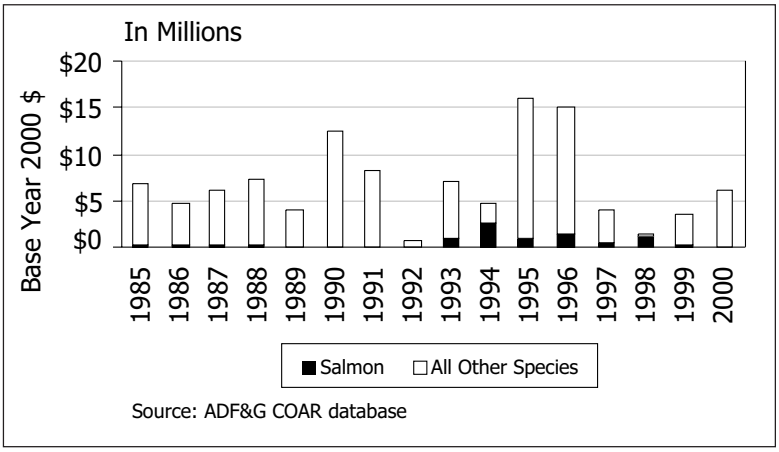
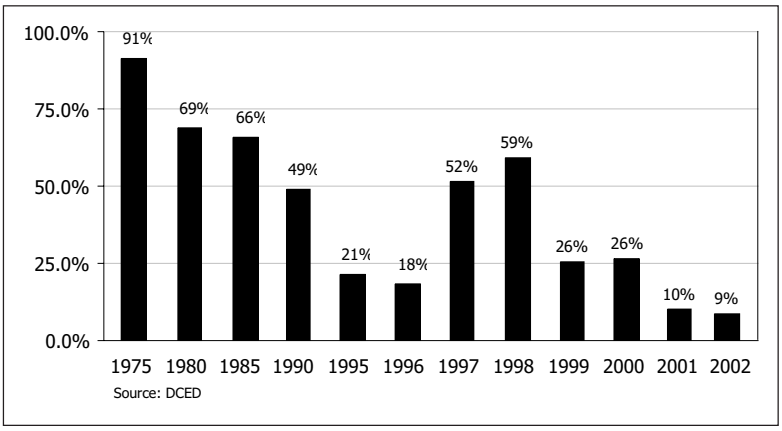


Figure 118.
Percent Salmon Income of Seafood Industry Income, Nome Census Area.



The participation by residents in the salmon fisheries is small and variable. Nome Census Area residents are primarily active in the Norton Sound and Lower Yukon River fisheries. The Norton Sound fishery is highly variable and has been in decline since 1988. Pink harvests now occur only every other year. Chum harvests have been steadily declining since 1988 and are now only 8 percent to ten percent of the harvests prior to 1988. There is a shift in fishing away from salmon and herring roe to red crab. There was no reported commercial salmon income from 1989-1992. The charts in this section show gross earnings to commercial fishers and wholesale production of processors.

Figure 119.
Salmon Income Versus All Other Personal Income,
Nome Census Area.

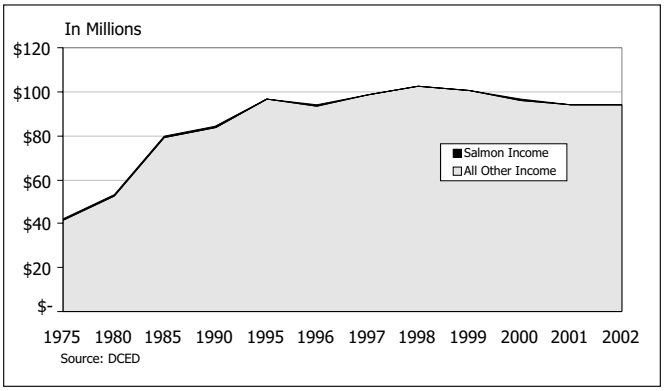
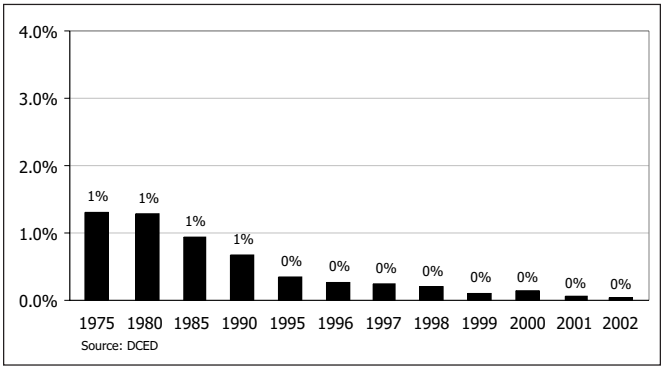


Figure 120.
Percent Salmon Income of Total Personal Income,
Nome Census Area.



Personal income earned from salmon fishing was once prominent and accounted for 91 percent of the all the resident personal income earned in the seafood industry in 1975. Since then it has fallen off dramatically and now accounts for about ten percent.

From 1975-1995, personal income from salmon accounted for about one percent of all resident income. Since 1995, the percent salmon income is far less than one percent.

Northwest Arctic Borough

In this region, government employment and the Red Dog Mine are the primary income contributors. Health care, transportation, services and construction also contribute to the economic base. Subsistence plays a significant role in the economy. Average per capita wealth from 1995 to 1999 consisted of 55 percent cash, 18 percent transfer payments (including the Permanent Fund dividends) and 27 percent subsistence foods.

Figure 121.
Commercial Fishing Gross Earnings, Northwest Arctic Borough.

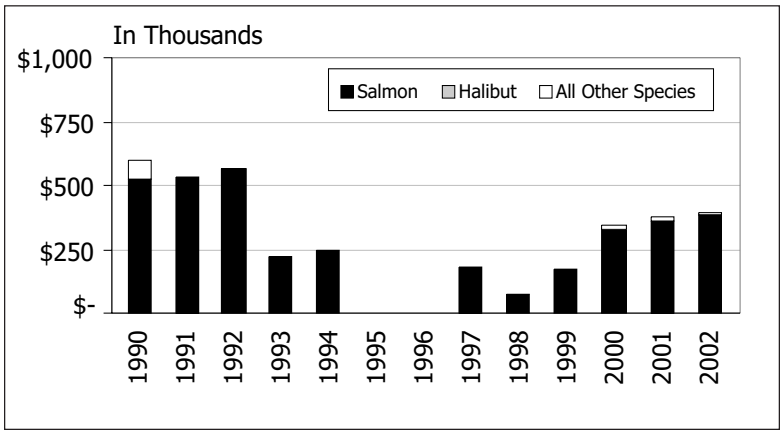
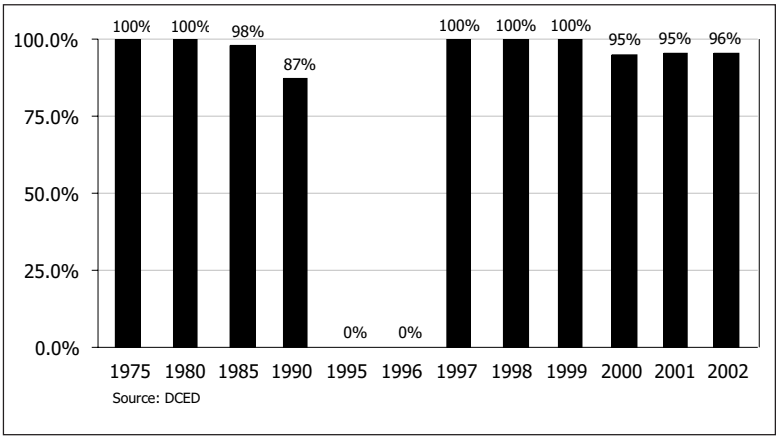


Figure 122.
Percent Salmon Income of Seafood Industry Income, Northwest Arctic Borough.



The participation by residents in the salmon fisheries is small and is dominated by salmon (87 to 100 percent). About 95 percent of the salmon fishers in the Borough participate in the Kotzebue Sound fisheries. There were no commercial salmon fisheries during 1995 and 1996. Since 1990, fish buyers have been shipping salmon outside the Borough to be processed.

Figure 123.
Salmon Income Versus All Other Personal Income,
Northwest Arctic Borough.

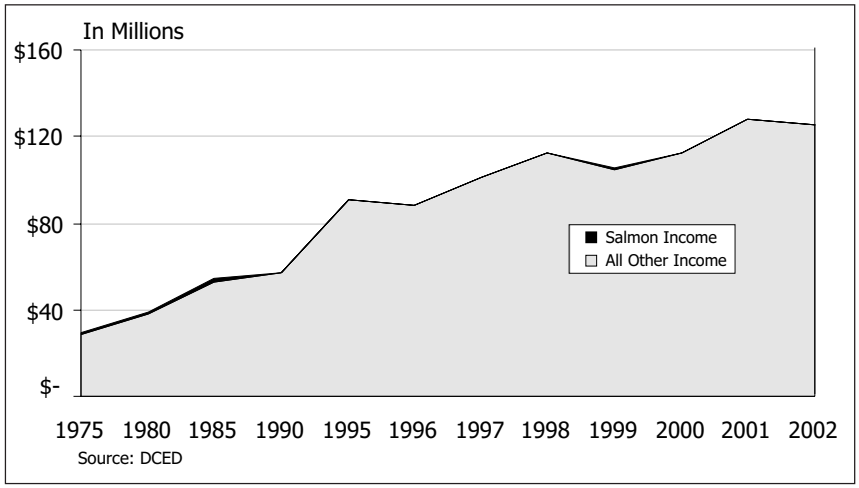
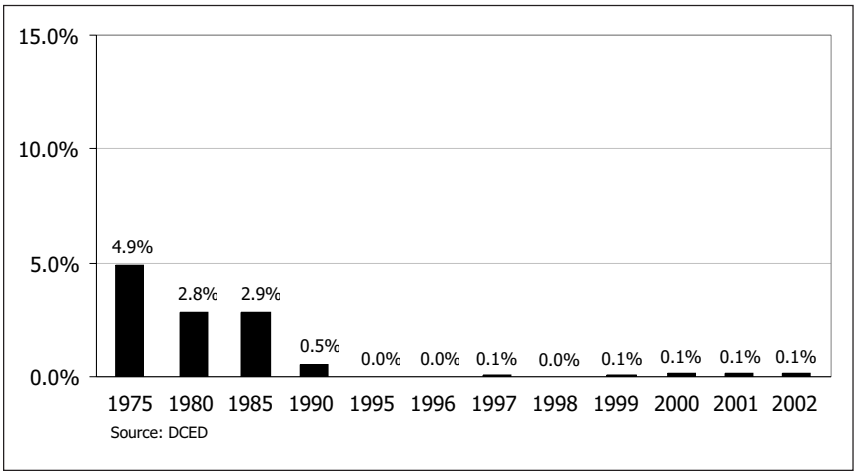


Figure 124.
Percent Salmon Income of Total Personal Income,
Northwest Arctic Borough.



While the salmon industry is small and variable, it normally represents 95 to 100 percent of the seafood industry income.

Resident personal income from salmon has always been small in comparison to total resident personal income. In 1975 the percent personal income from salmon was five percent. Even this small amount has declined dramatically to a tenth of a percent in 2002.

Prince of Wales - Outer Ketchikan Census Area

The Prince of Wales-Outer Ketchikan Census Area lies at the southern end of the Southeast Alaska Panhandle and includes the communities of Craig, Klawock, Metlakatla, Coffman Cove, Long Island, Annette, Dora Bay, Hydaburg and Polk Inlet. Much of the timber that fueled the Southeast wood products industry over the past 50 years came from Prince of Wales Island. The closing of the Ketchikan Pulp Company in 1997 left many island residents looking for new employment and some have started small-scale logging and manufacturing companies. Average per capita wealth from 1995 to 1999 consisted of 67 percent cash, 17 percent transfer payments (including the Permanent Fund dividends) and 16 percent subsistence foods.

Figure 125.
Commercial Fishing Gross Earnings, Prince of Wales Census Area.

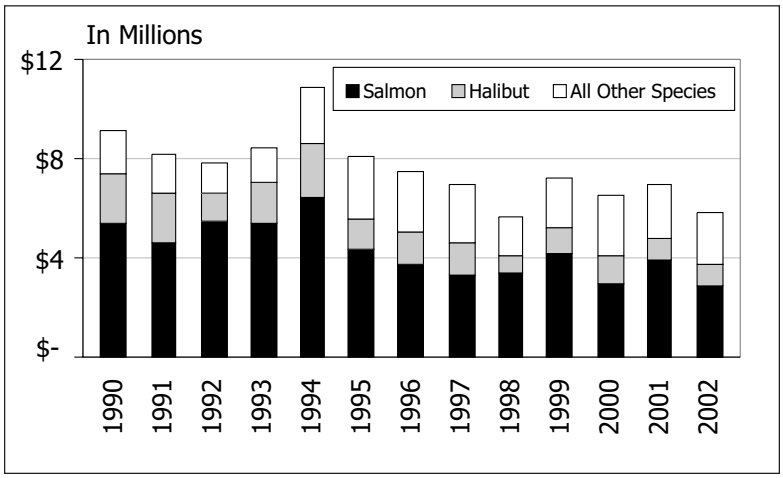


Figure 126.
Ketchikan-Craig Processors, Wholesale Value, Area B.

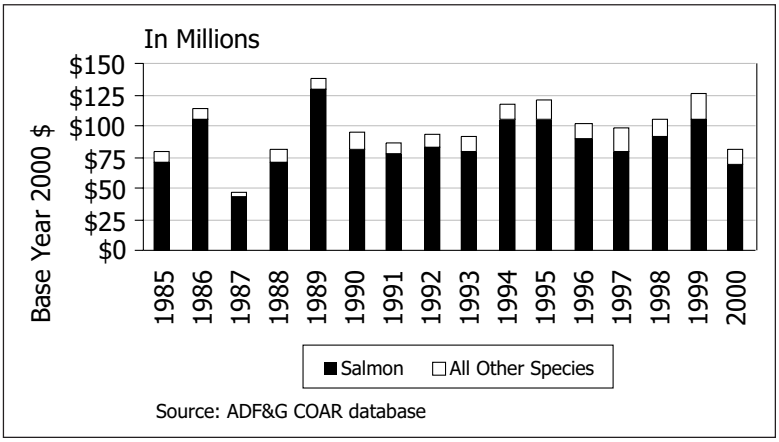
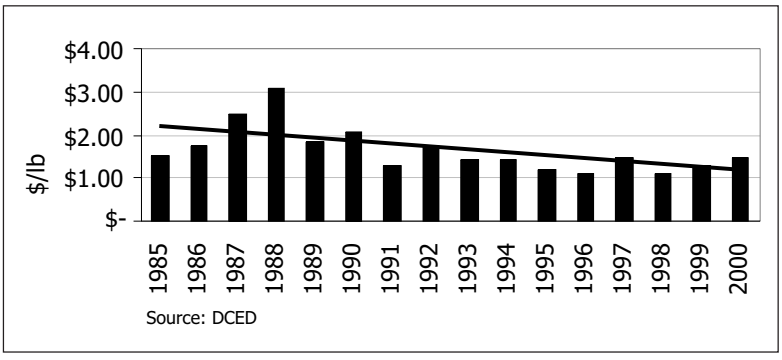


Figure 127.
Ketchikan-Craig Processors, Wholesale Unit Values for Salmon, Area B.



About 71 percent of the salmon fishers participate in the power-troll and hand-troll fisheries. Another 16 percent of the resident fishers participate in the Southeast seine and drift gill-net fisheries. The remaining 13 percent or residents fish Kodiak and Bristol Bay. Resident fishers are fairly diversified in halibut and other species, but the dependence on salmon is still high. Gross earnings from salmon have decreased since 1994. The charts in this section show gross earnings for fishers, wholesale production of processors and trends of wholesale prices.

There is a downward trend in wholesale salmon prices and an upward trend in the wholesale prices of other seafood products. The income earned in the non-salmon fisheries is only partially offsetting salmon losses.

From 1975 to 2002, the percent personal income from salmon of total resident income from the seafood industry generally declined from 91 to 50 percent.

Commercial, fishing, seafood processing, tourism and the federal government are the base industries in census area and account for 45 percent of the total economy. From 1975 to 1990, the personal income from salmon compared to total personal income has consistently varied in a tight range of three to eight percent. The dominance of the timber industry has minimized the contribution of salmon income. In addition, decreasing salmon prices due to farmed salmon is a contributing factor.

Figure 128.
Ketchikan-Craig Processors,
Wholesale Values for All Species, Area B.

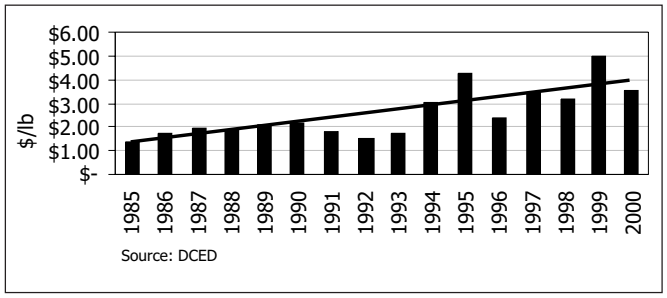


Figure 130.
Salmon Income Versus All Other Personal Income,
Prince of Wales - Outer Ketchikan Census Area.

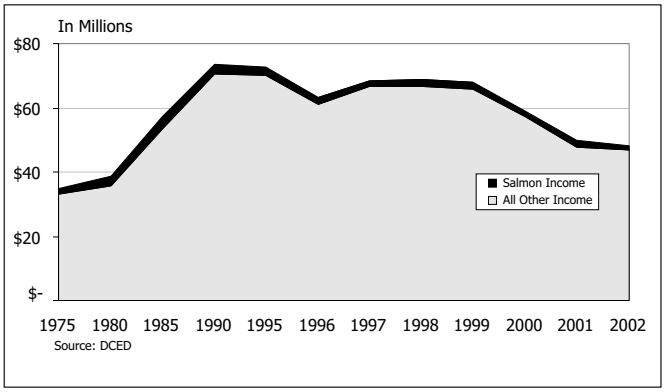


Figure 129.
Percent Salmon Income of Seafood Industry Income,
Prince of Wales - Outer Ketchikan Census Area.

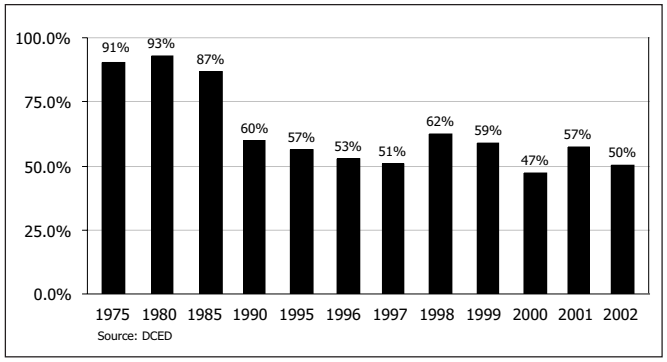
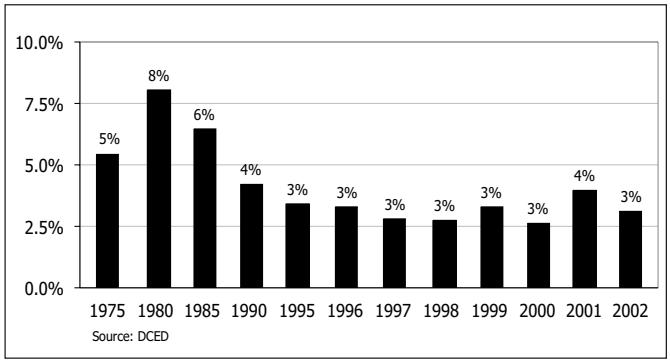


Figure 131.
Percent Salmon Income Versus Entire Census Area Economy,
Prince of Wales - Outer Ketchikan Census Area.



Sitka Borough

The City and Borough of Sitka enjoys a strong and diverse economy based on fishing, fish processing, tourism and the federal government ,which together make up 37 percent of the total economy. The community of Sitka is a major regional health center and a port of call for many cruise ships. Average per capita wealth from 1995 to 1999 consisted of 76 percent cash, 14 percent transfer payments (including the Permanent Fund dividends) and 10 percent subsistence foods.

Figure 132.
Commercial Fishing Gross Earnings, Sitka Borough.

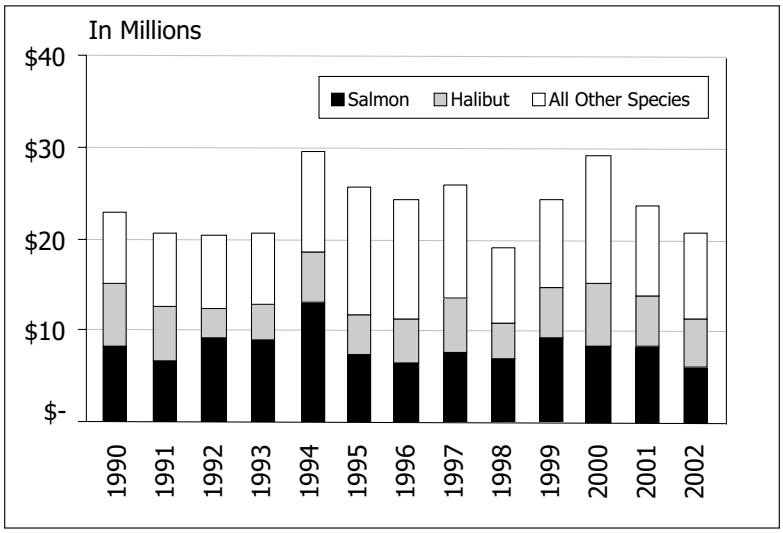


Figure 133.
Sitka-Pelican Processors, Wholesale Value, Area D.

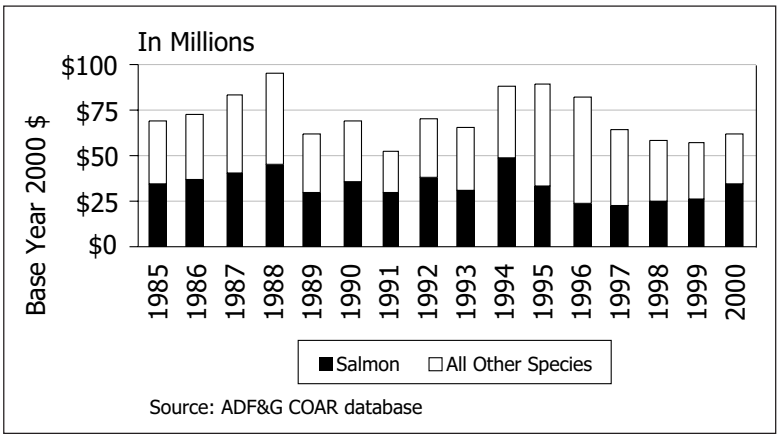
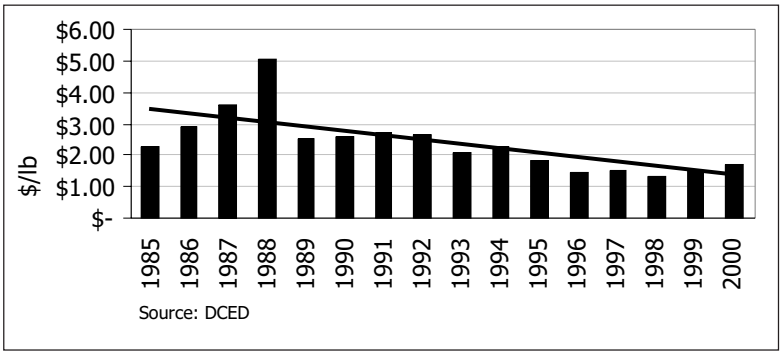


Figure 134.
Sitka-Pelican Processors, Wholesale Unit Values for Salmon, Area T.



About 89 percent of the resident salmon fishers participate in the power-troll and hand-troll fisheries and another nine percent participate in the Southeast seine and drift gill-net fisheries. Fishers are well-diversified in halibut and other non-salmon species. Gross earnings from salmon and other species has been relatively stable from 1975-2002. The charts in this section show the gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

There is a long-term downward trend in wholesale salmon prices and an upward trend for other seafood products. The upward trend is aiding the diversification into non-salmon fisheries. The income from all the fisheries is remarkably stable, given the natural volatility in the fisheries and price trends.

From 1975 to 1996, the percent personal income from salmon of the total resident income from the seafood industry decreased from 71 to 28 percent. From 1997 to 2002, this percentage increased slightly and now varies from 30 to 39 percent.

From 1975 to 1990, the percent personal income from salmon of total resident personal income increased from one to five percent. The rather low percentage is due to high contributions from other fisheries and the Sitka pulp mill, which closed in 1993. From 1995 to 2002, the percentage personal income of total personal income decreased slightly and now varies in the range of three to four percent. The small, but relatively stable salmon income is due to concentration of power trollers which target higher value fish.

Figure 135.
Sitka-Pelican Processors,
Wholesale Values for All Species, Area D.

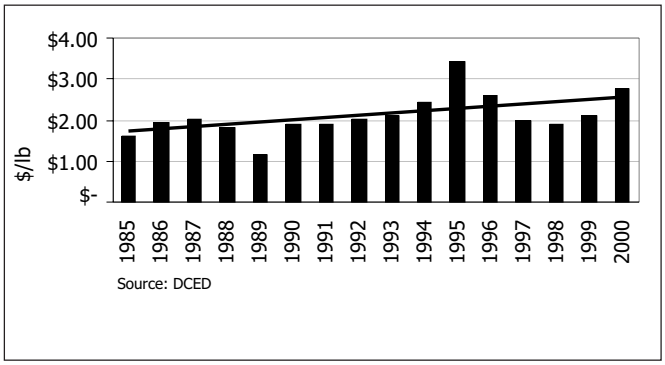


Figure 136.
Percent Salmon Income of Seafood Industry Income,
Sitka Borough.

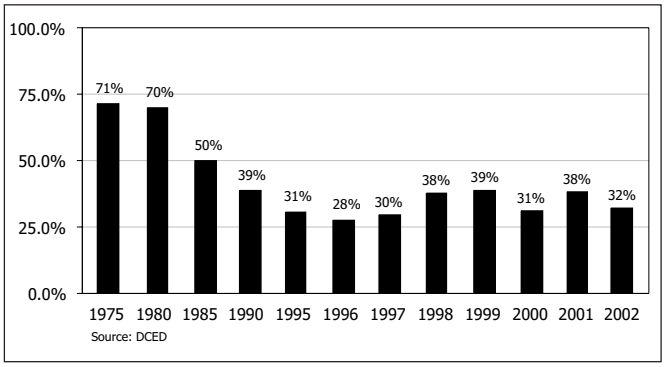


Figure 137.
Salmon Income Versus All Other Personal Income,
Sitka Borough.

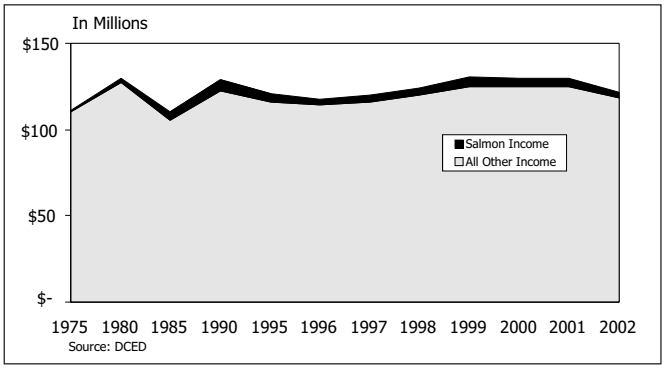
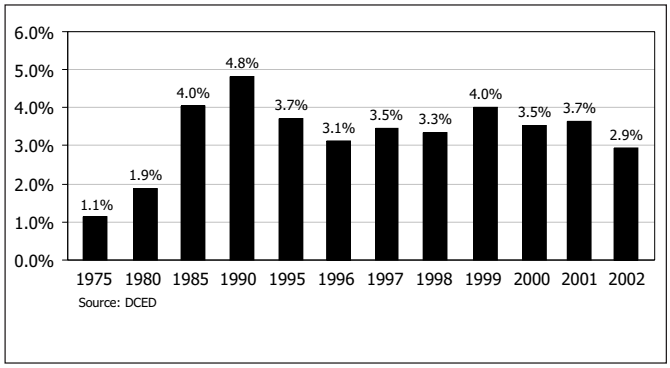


Figure 138.
Percent Salmon Income Versus Entire Census Area Economy,
Sitka Borough.



Skagway-Hoonah-Angoon Census Area

Located in the northern part of Alaska's Southeast Panhandle, the Skagway-Hoonah-Angoon Census Area is composed of 13 widely scattered, mostly coastal, communities that share similar cultural traditions and economic activities. The base industries make up 46 percent of the total economy and consist of tourism, commercial fishing, logging, seafood processing and the federal government. Many local economies are shrinking due to downturns in commercial fishing, fish processing and export timber markets. Many residents depend on subsistence hunting and fishing. Average per capita wealth from 1995 to 1999 consisted of 71 percent cash, 16 percent transfer payments (including the Permanent Fund dividends) and 13 percent subsistence foods.

Figure 139.
Commercial Fishing Gross Earnings, Skagway-Hoonah-Angoon Census Area

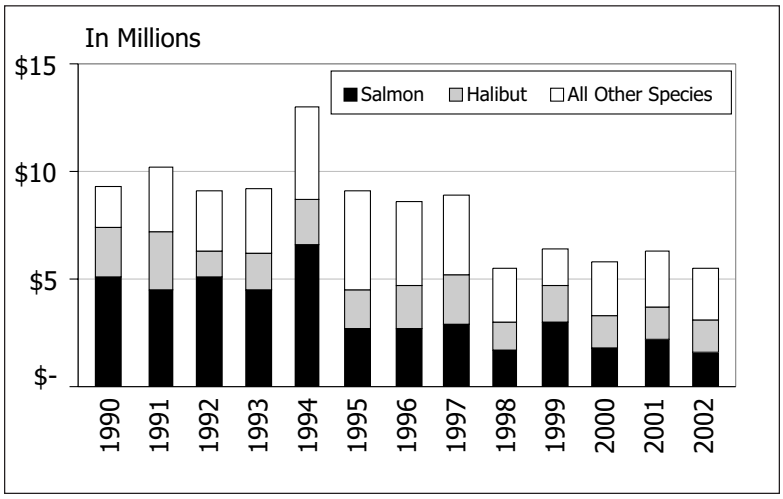
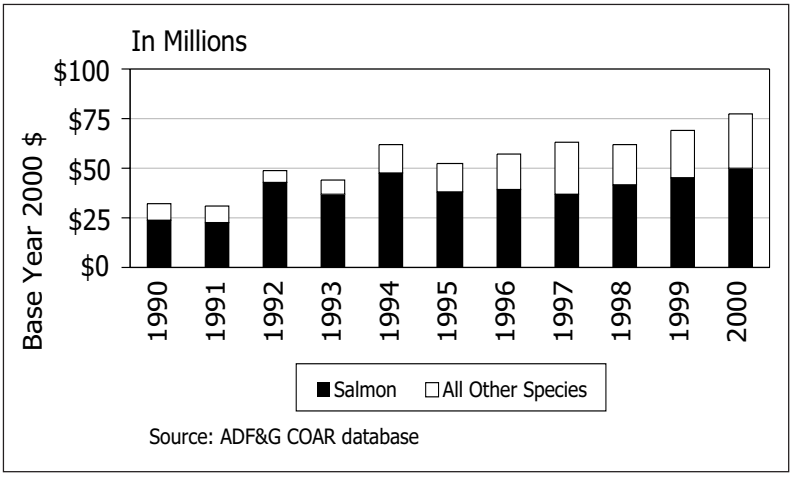
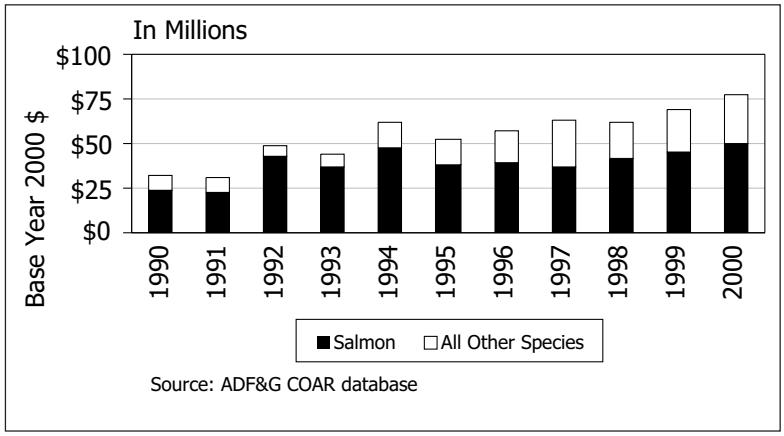


Figure 140.
Sitka-Pelican Processors, Pounds Processed, Area D



Over 90 percent of the resident fishers participate in the Southeast power-troll and hand-troll fisheries. Resident fishers are well-diversified in halibut and other non-salmon species. Gross earnings from salmon have decreased

Figure 141.
Juneau-Haines Processors, Wholesale Value, Area A



consistently since 1994. Gross earnings from non-salmon species are decreasing as well, but at a much lower rate. The charts in this section show the gross earnings to fishermen, the wholesale production of processors and the trends in wholesale prices.

There is a long-term downward trend in salmon wholesale values and an upward trend in wholesale for other seafood products. The decreased

Figure 142.
Sitka-Pelican Processors,
Wholesale Values for Salmon, Area D.

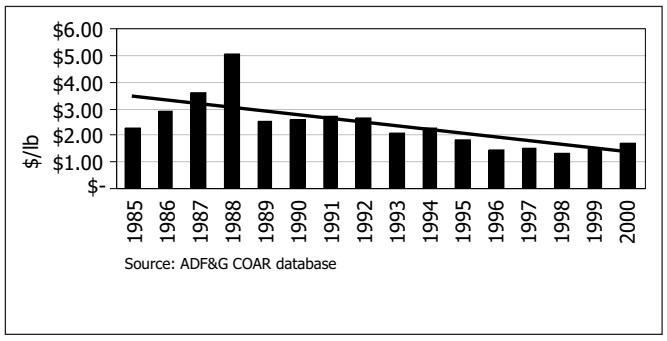


Figure 143.
Petersburg-Wrangell Processors,
Wholesale Values for Salmon, Area C.

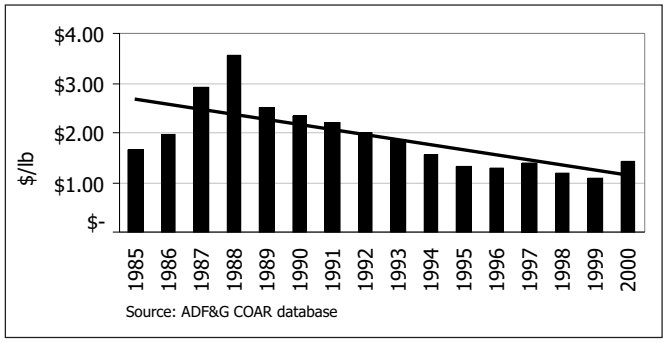


Figure 144.
Juneau-Haines Processors,
Wholesale Values for Salmon, Area A.

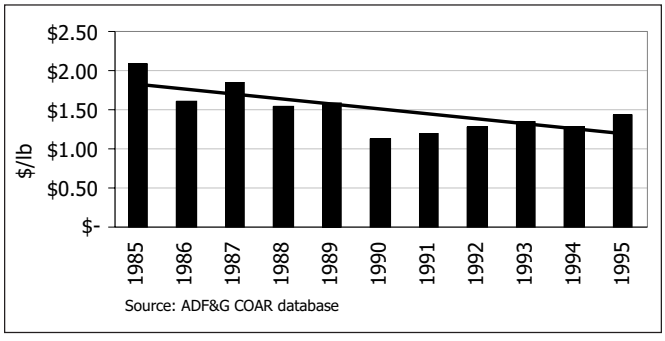
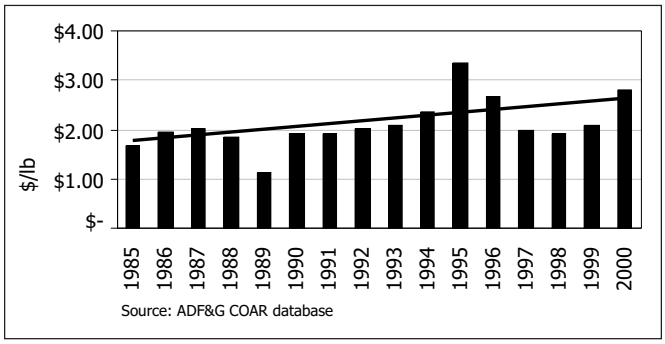


Figure 145.
Sitka-Pelican Processors,
Wholesale Values for All Other Species, Area D.



earnings from non-salmon species versus the upward trend in wholesale values, suggests that non-salmon harvests are lower than in the past. The income earned in the other fisheries is only partially offsetting the losses in salmon.

From 1975 to 1990, personal income from salmon generally decreased from 73 to 57 percent of all resident income earned in the seafood industry. This percentage has remained essentially

Figure 146.
Petersburg-Wrangell Processors,
Wholesale Values for All Other Species, Area C.

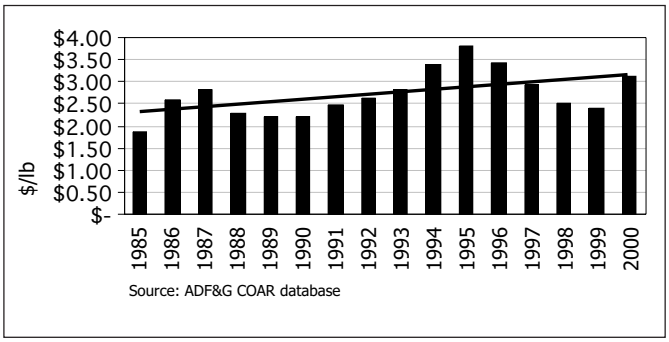


Figure 147.
Juneau-Haines Processors,
Wholesale Values for All Other Species, Area A.

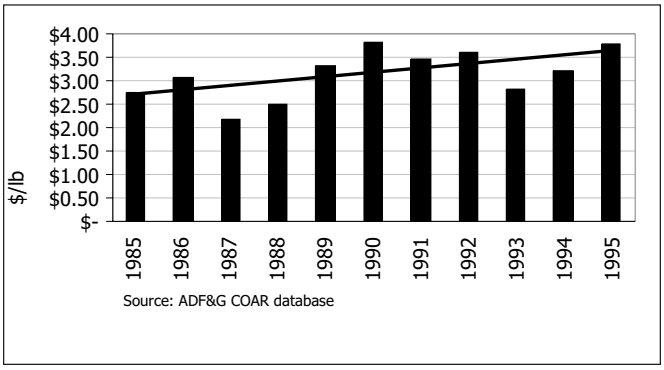


Figure 148.
Percent Salmon Income of Seafood Industry Income,
Skagway-Hoonah-Angoon Census Area.

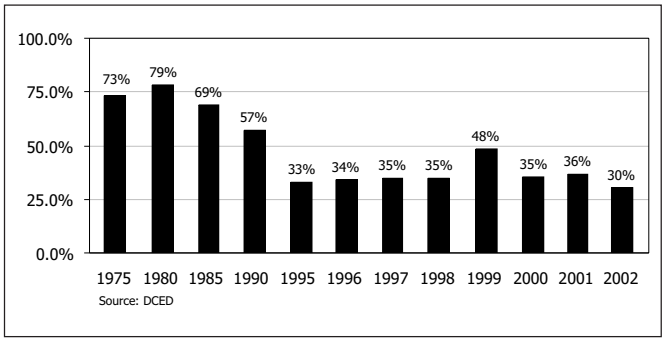
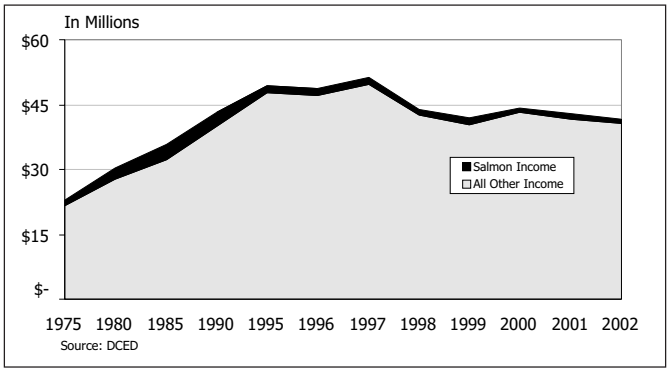


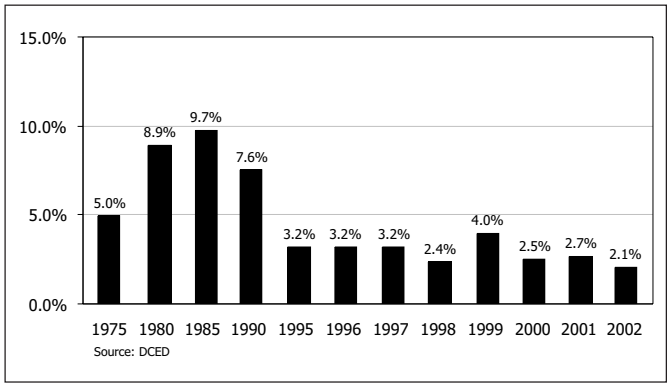
Figure 149.
Percent Salmon Versus All Other Personal Income,
Skagway-Hoonah-Angoon Census Area.



stable in a range between 30 to 36 percent since 1995 with the exception of 1999, a very good pink salmon year, when salmon income increased to 48 percent of all seafood income.

From 1975 to 1990, the percent of resident income from salmon out of the total resident personal income generally increased from five to ten percent. From 1995 to 2002 this percentage dramatically fell and has varied from two to four percent. The reasons for decrease are the rise and fall of timber harvesting and decreasing salmon prices due to farmed salmon.

Figure 150.
Percent Salmon Income Versus Entire Census Area Economy, Skagway-Hoonah-Angoon Census Area.



Valdez-Cordova Census Area

The economy in the Valdez-Cordova Census Area is diverse and dominated by oil and cargo shipping, commercial fishing and seafood processing. Nearly half of all households have someone working in fishing or the processing industry. Salmon represents 57 percent of the base industry economy. Average per capita wealth from 1995-1999 consisted of 82 percent cash, 12 percent transfer payments (including Permanent Fund dividends) and six percent subsistence foods.

Figure 151.
Commercial Fishing Gross Earnings, Valdez-Cordova Census Area.

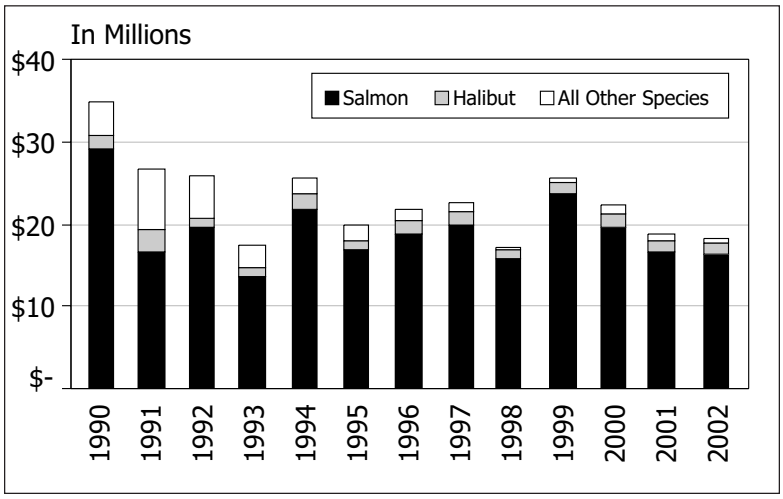


Figure 152.
Prince William Sound Processors, Wholesale Value, Area E.

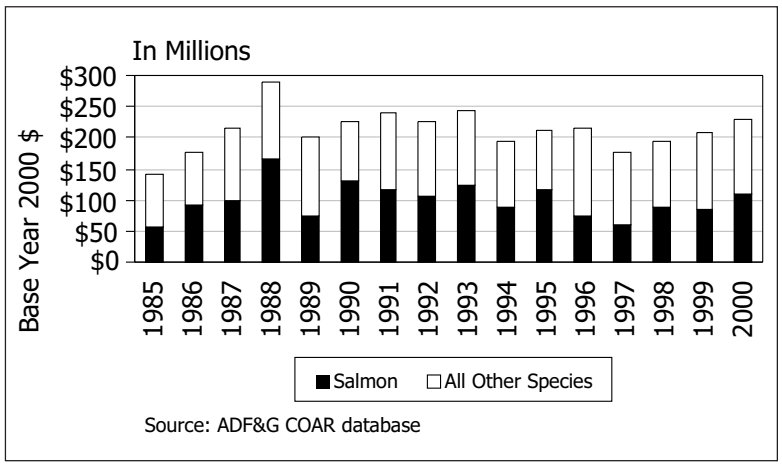
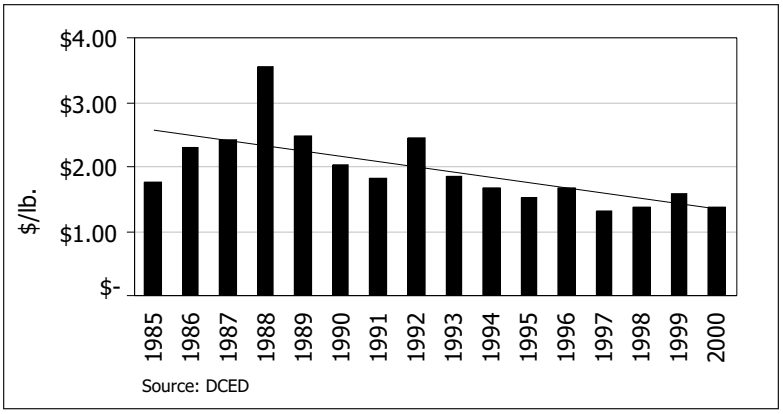


Figure 153.
Prince William Sound Processors, Wholesale Unit Values for Salmon, Area E.



About 92 percent of Valdez-Cordova salmon fishers participate in the fisheries around Prince William Sound. The remaining 8 percent are active in Bristol Bay and Kotzebue Sound. The commercial fisheries are not well diversified and dependence on salmon is increasing. Gross earnings from salmon have been volatile and have generally decreased from 1975 to 2002. The decrease is due to a glut in the pink salmon market and to a lessor extent to decreasing prices due to farmed salmon. The charts below show the gross earnings to fishers, wholesale production of processors and trends in wholesale values.

While the wholesale value of salmon is decreasing the wholesale values for non-salmon seafood products is generally increasing. The income in the other fisheries is only partially offsetting salmon losses.

From 1975 to 2002 the resident personal income from salmon increased steadily from 71 to 90 percent of all the resident income earned in the seafood industry.

The percent of resident income from salmon to total personal income within the census area has decreased. In 1975, a very poor salmon year, the percent of salmon income was only two percent. The data also indicates a dramatic increase in short-term income as a result of the construction of the oil pipeline. From 1980-85, the percent of salmon income to total personal income was between 11 and 12 percent. From 1990 to 2002, this percentage moved in a narrow range from five to eight percent. The reasons for a lower dependence on salmon is fourfold: the growth of oil and cargo shipping, the growth in the private support sector, an over supply of pink salmon and lower salmon prices due to farmed salmon.

Figure 154.
Prince William Sound Processors,
Wholesale Values for All Species, Area E.

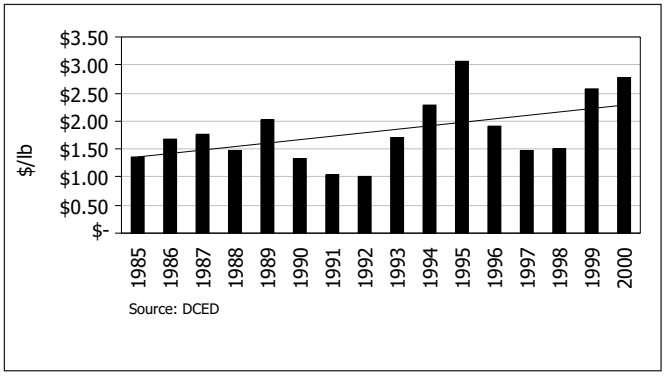


Figure 155.
Percent Salmon Income of Seafood Industry Income,
Valdez-Cordova Census Area.

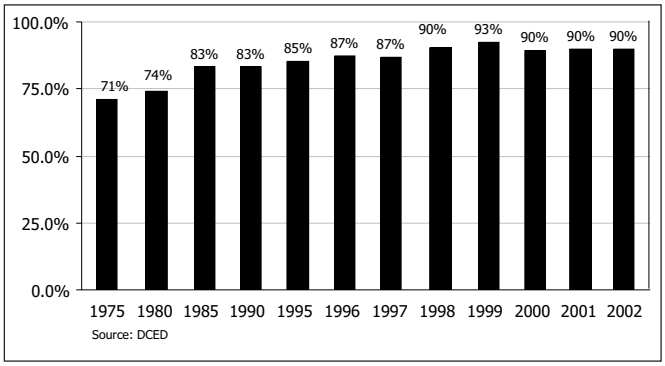


Figure 156.
Salmon Income Versus All Other Personal Income,
Valdez-Cordova Census Area.

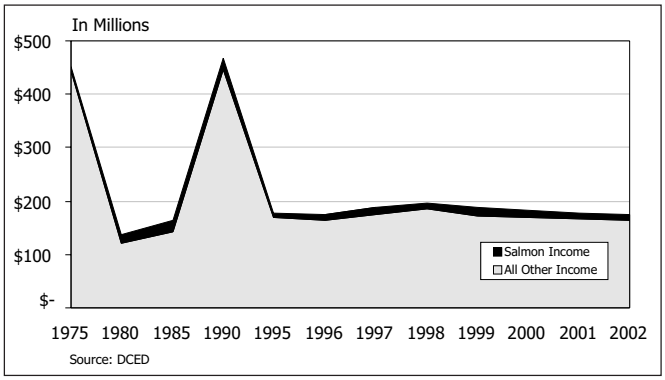
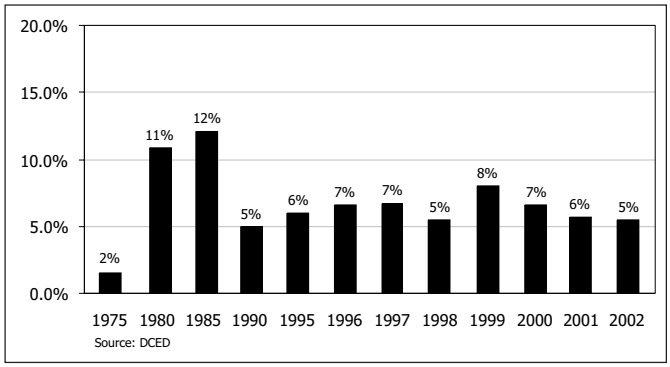


Figure 157.
Percent Salmon Income of Total Personal Income,
Valdez-Cordova Census Area.



Wade Hampton Census Area

The Wade Hampton Census Area is dominated by the subsistence economy. Cash earned in the commercial fishery generally supported subsistence activities. Commercial fishing, seafood processing and a very small federal government make up the base industries and are now estimated at only one percent of the total cash economy. Average per capita wealth from 1995-1999 consisted of 31 percent cash, 26 percent transfer payments (including Permanent Fund dividends) and 43 percent subsistence foods.

Figure 158.
Commercial Fishing Gross Earnings, Wade-Hampton Census Area.

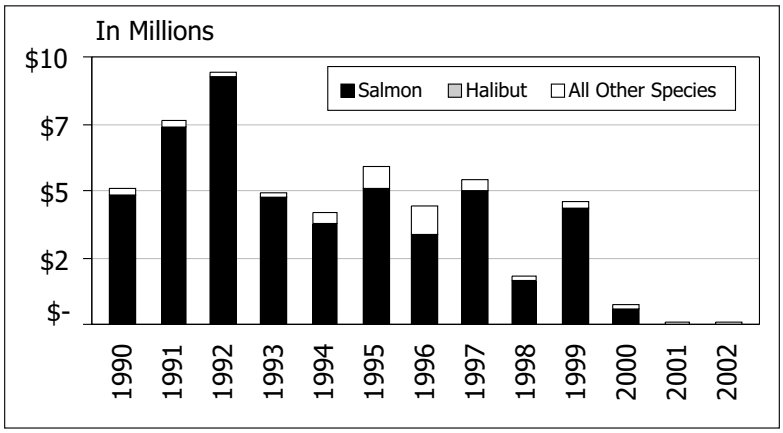


Figure 159.
Yukon River Processors, Salmon Production and Wholesale Value, Area Y.

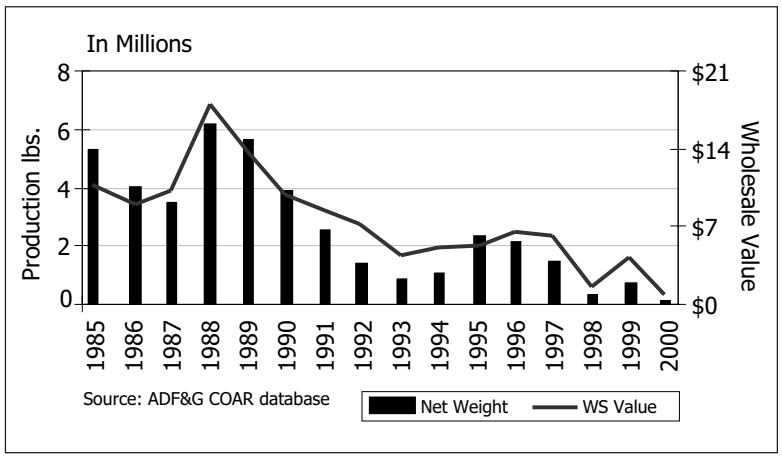
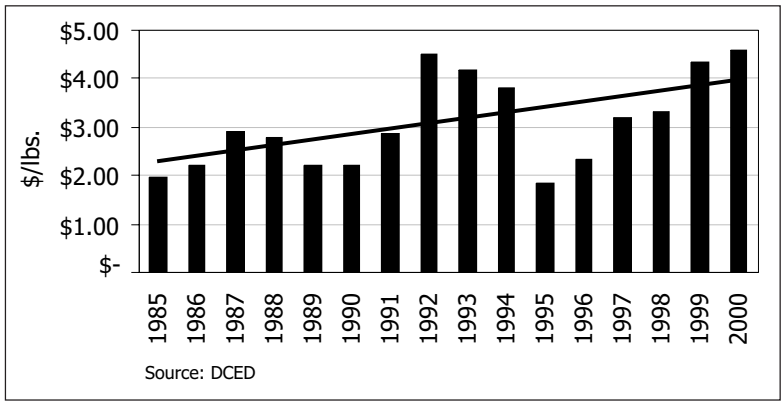


Figure 160.
Yukon River Processors, Wholesale Unit Values for Salmon, Area Y.



Wade Hampton Census Area salmon fishers are active in the Lower Yukon River (99 percent) and other fisheries such as Bristol Bay and Goodnews Bay (one percent). The participation by residents in the salmon fisheries is drastically declining and the diversification into other fisheries remains small. Since 1997, commercial salmon gross earnings are down 96 percent from the 1990-1996 average. Likewise, wholesale salmon values have also plummeted. The charts in this section show gross earnings to fishers, wholesale production and trends in wholesale salmon prices.

Yukon River king salmon enjoyed generally rising wholesale prices from 1980 to 2000, but poor salmon runs preclude a viable commercial fishery.

Figure 161.
Percent Salmon Income of Seafood Industry Income,
Wade-Hampton Census Area.

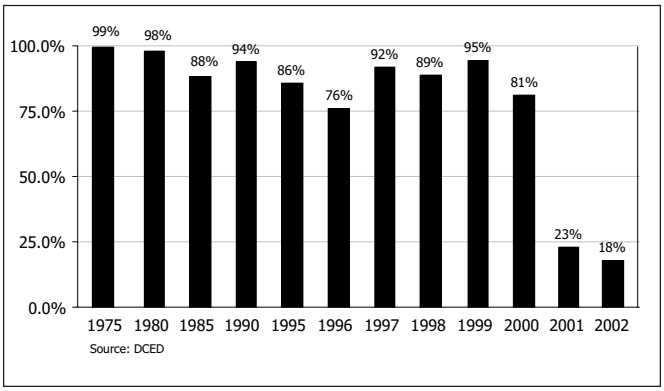


Figure 162.
Salmon Income Versus All Other Personal Income,
Wade-Hampton Census Area.

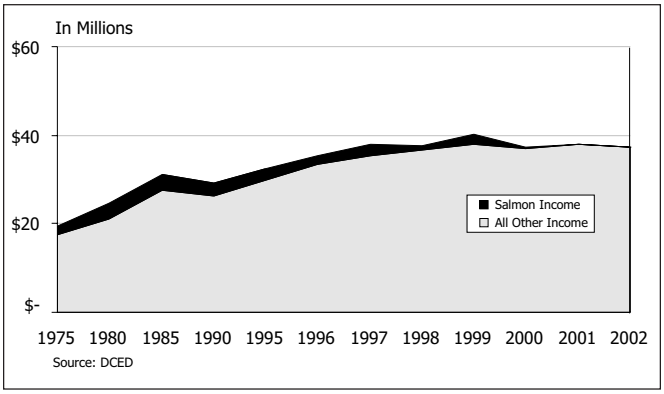
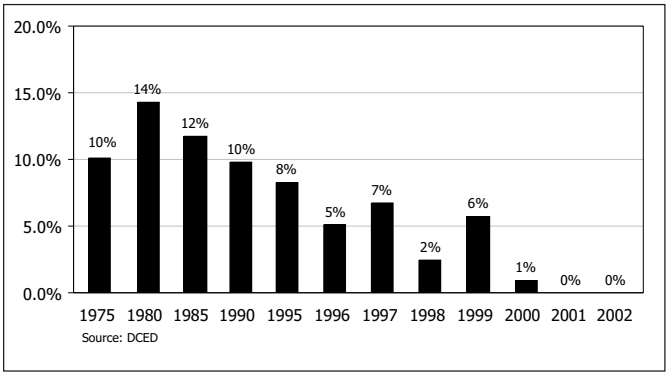


Figure 163.
Percent Salmon Income of Total Personal Income,
Wade-Hampton Census Area.



From 1975 to 2000, salmon accounted for 76 to 99 percent of the resident seafood industry income. In 2001, the percent of income from salmon crashed to 23 percent and was 18 percent in 2002.

In terms of the entire census area economy, salmon income varied between 10 and 14 percent of total income from 1975-1980. Since 1985 salmon income has generally decreased from 12 percent to less than one percent.

Wrangell-Petersburg Census Area

The Wrangell-Petersburg Census Area includes the small, coastal communities of Wrangell, Petersburg, Kake and Port Alexander. In general, these communities depend on commercial fishing and timber harvesting, which together account for 57 percent of the total economy. With the exception of Kake, there is a relatively low dependence on subsistence resources. Average per capita wealth from 1995 to 1999 consisted of 73 percent cash, 17 percent transfer payments (including the Permanent Fund dividends) and ten percent subsistence foods.

Figure 164.
Commercial Fishing Gross Earnings, Wrangell-Petersburg Census Area.

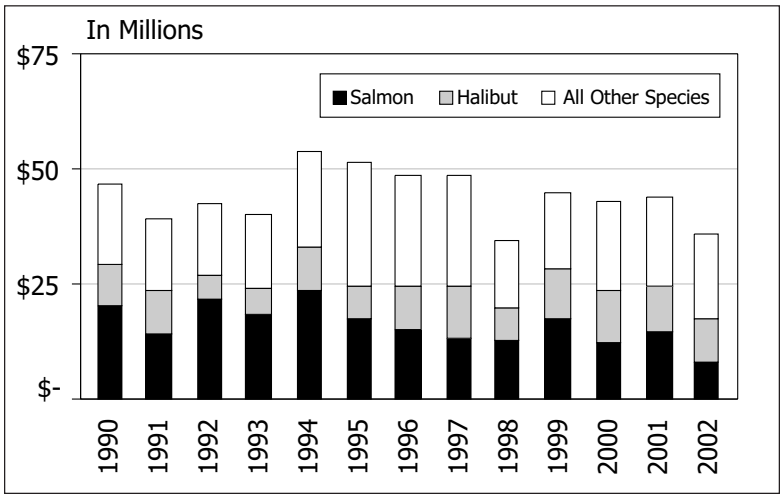


Figure 165.
Petersburg-Wrangell Processors, Wholesale Value, Area C.

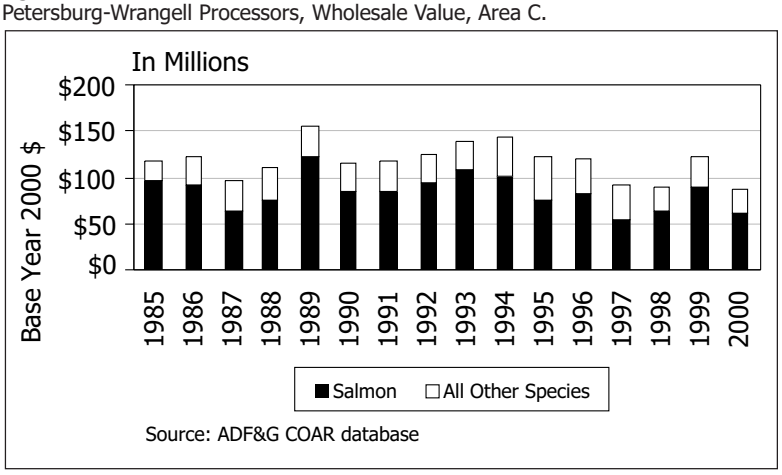
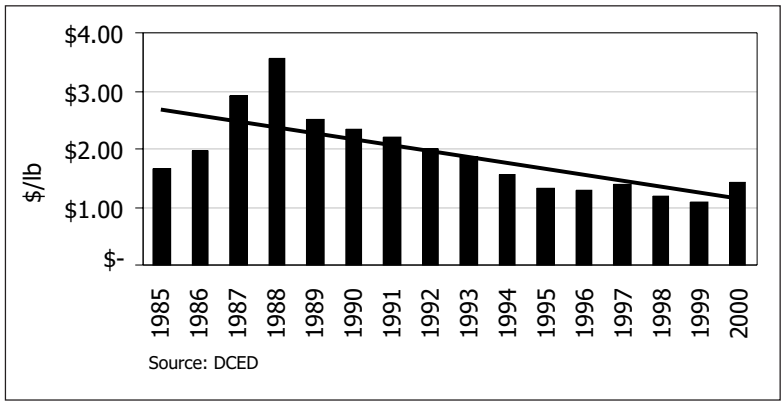


Figure 166.
Petersburg-Wrangell Processors, Wholesale Unit Values for Salmon, Area C.



About 49 percent of the salmon fishers participate in the Southeast seine and drift gill-net fisheries. Another 48 percent of resident fishers participate in the power-troll and hand-troll fisheries. Resident fishers are well diversified in halibut and other species. The role of salmon is diminishing. Gross earnings from non-salmon species has been relatively stable from 1975-2002. The charts in this section show gross earnings to fishers, wholesale production and trends in wholesale salmon prices.

The long-term wholesale price trend for salmon is declining, while the trend for other seafood products is rising.

From 1975 to 1990, the personal income from salmon, compared to total resident income from the seafood industry, varied within a range of 54 to 64 percent. From 1995 to 2002, this percentage has substantially decreased and now varies within a

range of 29 to 40 percent. There is a long-term, downward trend in the salmon wholesale values and an upward trend in the wholesale price for other seafood products. The income from all the fisheries is remarkably stable.

From 1975 to 1990, the personal income from salmon compared to total personal income, increased from 5 to 19 percent. From 1995 to 2002, this percentage decreased and varies in a range of 6 to 12 percent. Despite a downturn in the timber and salmon industry, the private support sector is growing. This growth is primarily due to increases in transfer payments and other government spending.

Figure 167.
Petersburg-Wrangell Processors,
Wholesale Values for All Other Species, Area E.

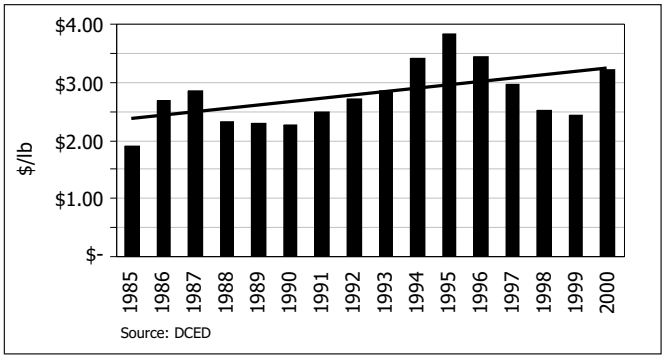


Figure 168.
Percent Salmon Income of Seafood Industry Income,
Wrangell-Petersburg Census Area.

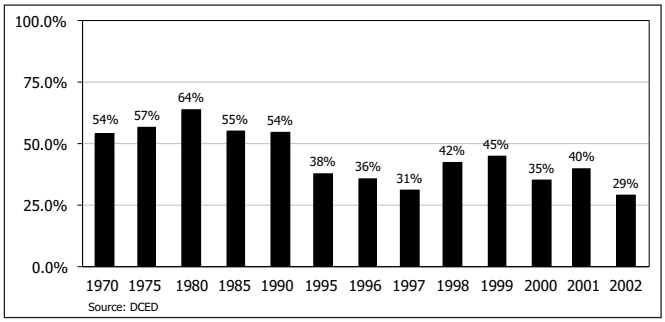


Figure 169.
Salmon Income Versus All Other Personal Income,
Wrangell-Petersburg Census Area.

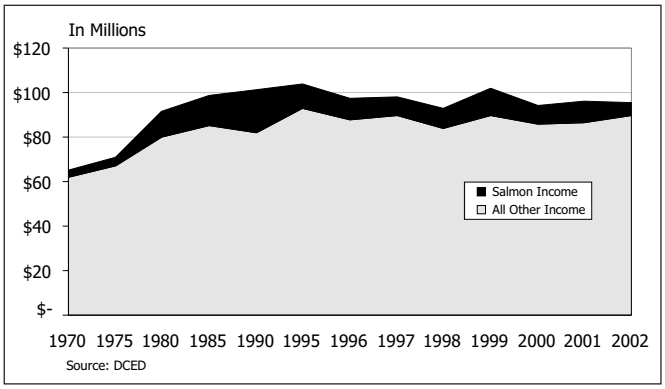
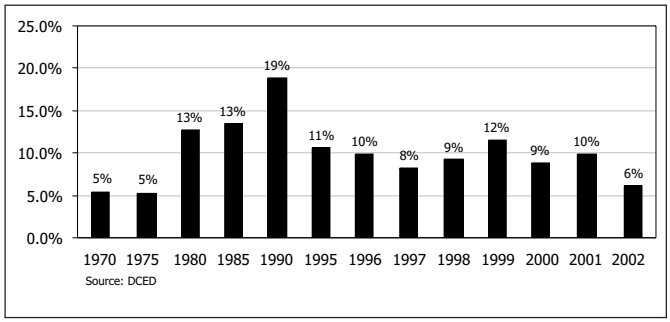


Figure 170.
Percent Salmon Income Versus Entire Census Area Economy,
Wrangell-Petersburg Census Area.



Yakutat Borough

Commercial fishing and fish processing have emerged as the mainstay for the Borough economy. The timber and tourism industries also play a major role. The base industries in the Yakutat Borough make up 48 percent of the total economy. Most people in Yakutat depend on subsistence hunting and fishing. Average per capita wealth from 1995 to 1999 consisted of 74 percent cash, ten percent transfer payments (including the Permanent Fund dividends) and 16 percent subsistence foods.

Figure 171.
Commercial Fishing Gross Earnings, Yakutat Borough.

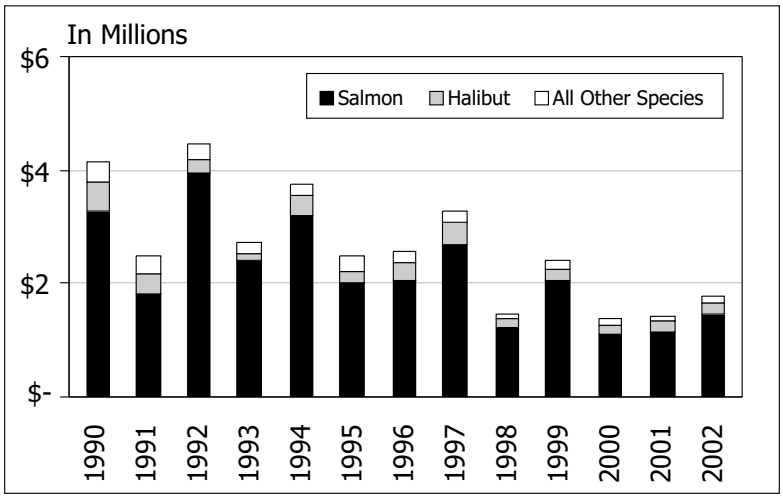


Figure 172.
Yakutat Processors, Wholesale Value, Area A.

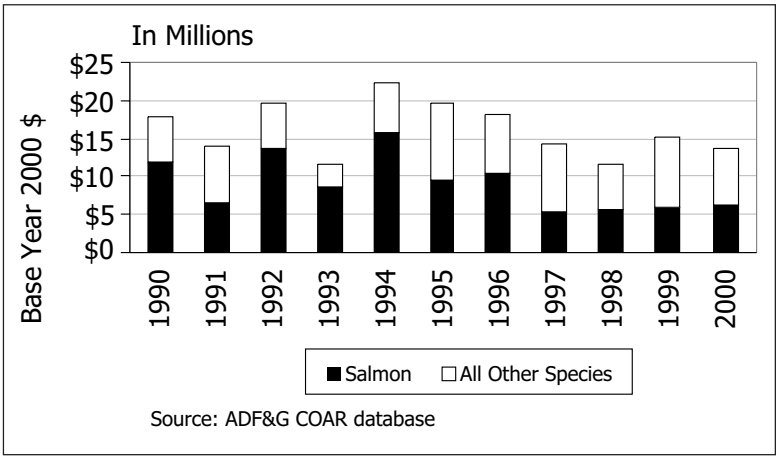
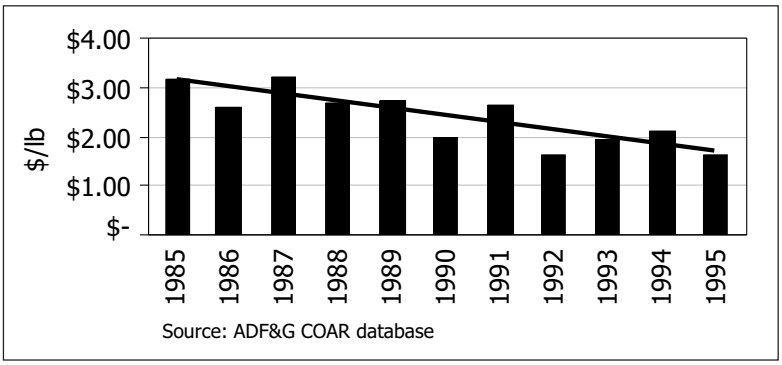


Figure 173.
Yakutat Processors, Wholesale Unit Values for Salmon, Area C.



Yakutat fishers depend heavily on salmon and 79 percent participate in the Yakutat gill net fishery. The remaining 21 percent of the fishers are active in other fisheries around the state. There is very little involvement in halibut and crab fisheries. The charts below show gross earnings to fishers, wholesale production and trends in wholesale salmon prices.

Wholesale price trends for salmon are declining, while the price trend for other seafood products are rising. However, the income from other fisheries is not significantly offsetting the losses in salmon.

In 1975, personal income from salmon accounted for about 70 percent of all resident income earned in the seafood industry. This percent grew in the 1980s to 94 percent. From 1990 to 2002, the percentage decreased to a range of between 69 and 79 percent.

From 1975 to 1990, the percent salmon income of residents of total personal income increased from 12 to 29 percent. From 1995 to 2002 this percentage fell and remained in a range between six and ten percent. The reasons for decrease are the rise and fall of logging over the period 1993 to 2000, and decreasing salmon prices due to farmed salmon.

Figure 174.
Yakutat Processors,
Wholesale Values for All Other Species, Area E.

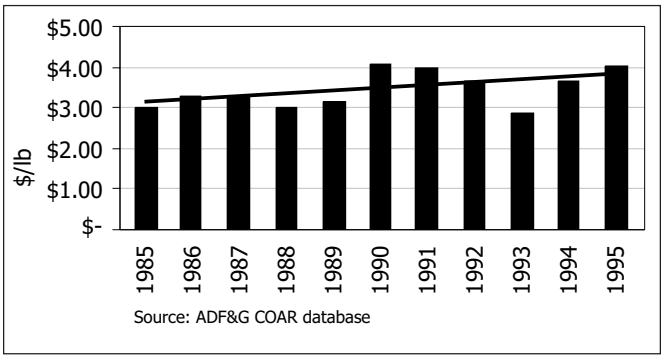


Figure 175.
Percent Salmon Income of Seafood Industry Income,
Yakutat Borough.

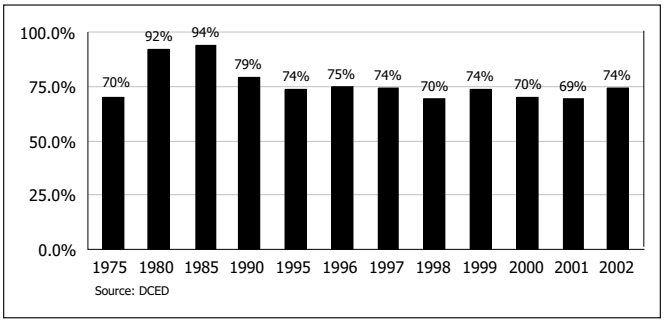


Figure 176.
Salmon Income Versus All Other Personal Income,
Yakutat Borough.

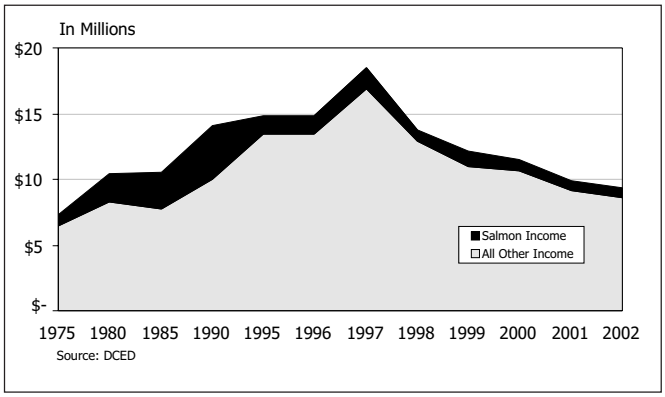
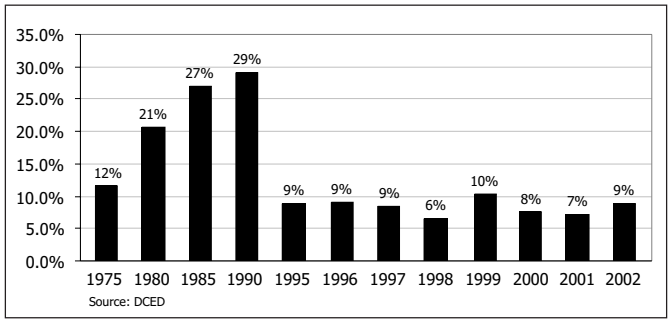


Figure 177.
Percent Salmon Income Versus Entire Census Area Economy,
Yakutat Borough.



Yukon Koyukuk Census Area

Commercial fishing, fish processing, timber, mining, oil and gas exploration, pipeline services, tourism, a small federal government presence, fur trapping and Native arts are the base industries of the region and only make up 12 percent of the entire economy that is highly dependent on subsistence activity. Average per capita wealth from 1995-1999 consisted of 52 percent cash, 17 percent transfer payments and 31 percent subsistence foods.

Figure 178.
Commercial Fishing Gross Earnings, Yukon-Koyukuk Census Area.

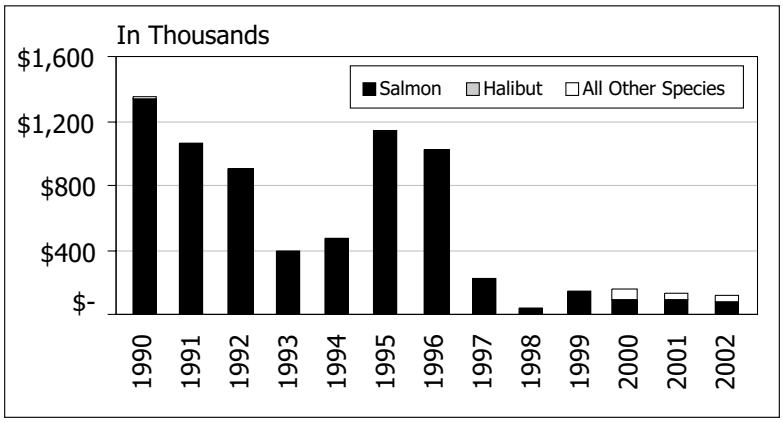
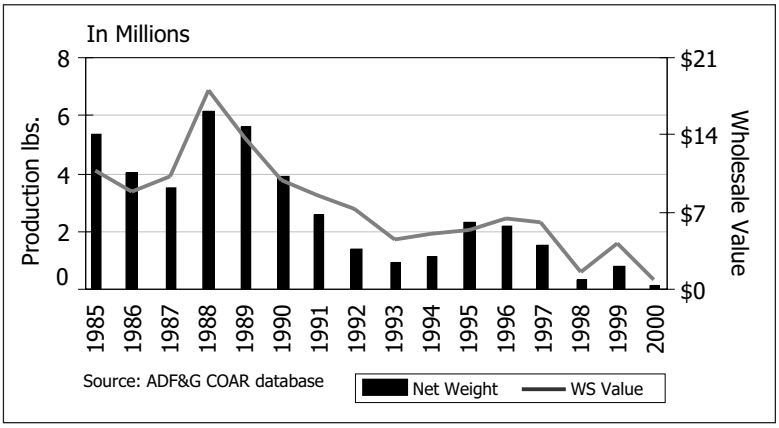
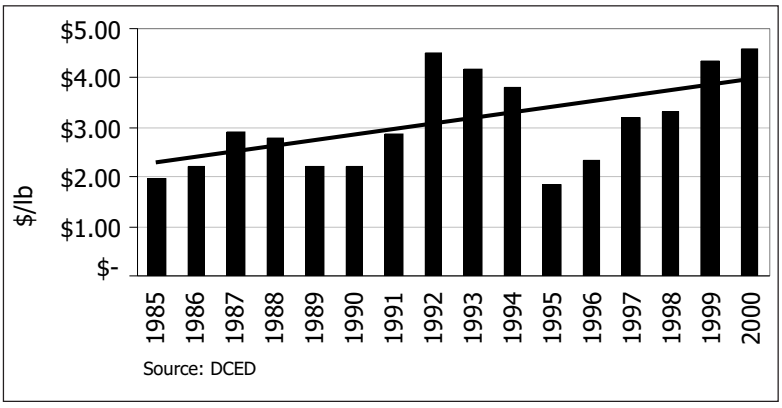


Figure 179.
Yukon-Koyukuk Processors, Salmon Production and Wholesale Value, Area Y.



The participation by residents in the salmon fisheries has declined drastically. Since 1997, commercial salmon gross earnings are down 99 percent from the 1990-1996 average. Likewise, total wholesale salmon value has plummeted. Ironically, Yukon River king salmon is a premium product and enjoyed a rising wholesale price trend since 1980s. Poor salmon runs have precluded a viable commercial fishery. The charts below show gross earnings to fishers, wholesale production of processors and trends in wholesale prices.

Figure 180.
Yukon River Processors, Wholesale Values for Salmon, Area Y.



Down from previous years, salmon now accounts for 75 percent of the resident seafood industry income.

In 1975, salmon income was only twentieth of a percent of the total resident income from all sources. However, this was due to the overwhelming income earned from construction of the Trans-Alaska Pipeline. From 1980 to 2002, the percent of salmon earnings out of the total economy fell from three percent in 1980 to a tenth of a percent in 2002.

Figure 181.
Percent Salmon Income of Seafood Industry Income,
Yukon-Koyukuk Census Area.

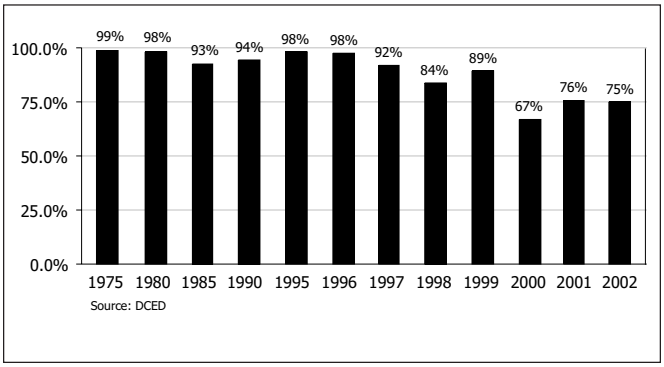


Figure 182.
Salmon Income Versus All Other Personal Income,
Yukon-Koyukuk Census Area.

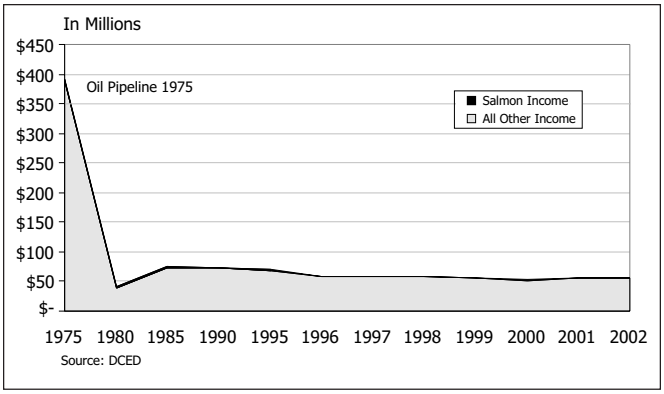
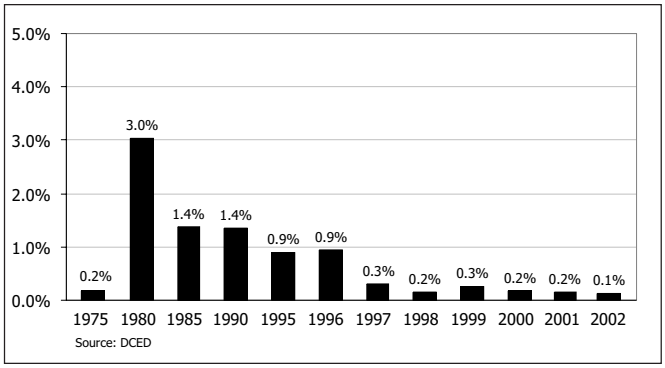


Figure 183.
Percent Salmon Income of Total Personal Income,
Yukon-Koyukuk Census Area.



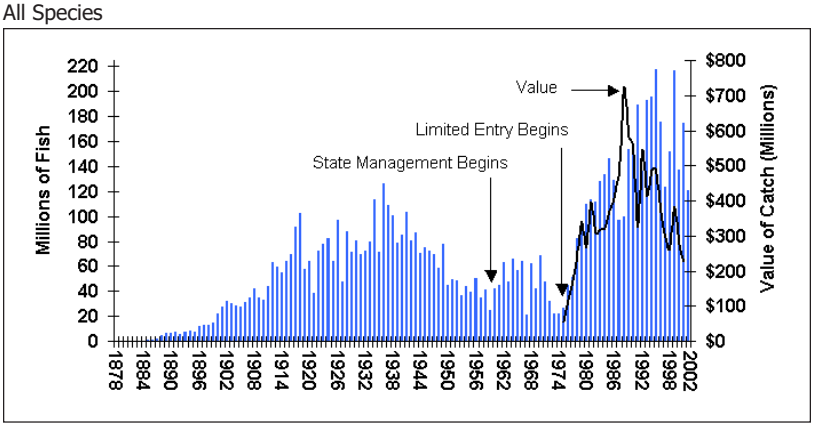
Part III. Major Influences on the Alaska Salmon Industry - 1970 to the Present with an Outlook to the Future

The purpose of this narrative is to examine key issues that have impacted world markets for Alaska salmon. In order to reinvigorate Alaska's salmon industry we first need to understand where we are and how we got here. A few simple, and oft used, statistical analyses will serve to illustrate our changed position in the world market and the general economic plight of our salmon industry. The goal is not "to wallow in the mire" of Alaska's diminished status in the world market, but rather to outline a path toward a brighter future for wild Alaska salmon.

ALASKA SALMON: THEN AND NOW

In this section, we will look at the position of the Alaska salmon industry from the early 1970s to the present. The years 1974-75 represent a nadir for salmon production in Alaska. Many fisheries were very severely restricted in an effort to rebuild stocks. The dismal condition of the resource was widely attributed to decades of mismanagement by federal authorities during the Territorial days. More enlightened policies instituted by the State have rightly been credited with the subsequent recovery of salmon stocks, although State biologists also now attribute the historical highs of recent years in part to general ocean conditions that favored salmon.[1] The chart below illustrates more than 120 years of salmon production in Alaska, and hints at several broad fluctuations over many decades.

Figure 202.
Alaska Commercial Salmon Catches and Value 1878 - 2002,
All Species



It is now widely acknowledged that ocean regime shifts occur with certain regularity. A significant warming in the late 1970s has been associated with huge increases in finfish biomass in the Western Gulf of Alaska and Bering Sea, with corresponding steep declines in other formerly abundant species such as pandalid shrimps. This warming trend is thought to have had a positive effect on recruitment of Alaska salmon stocks.

During this same period significant hatchery production of pink and chum salmon was brought on line in Southeast Alaska, Prince William Sound, and Kodiak. This enhanced "ocean ranching" also benefited from benign ocean conditions, and contributed to the high levels of salmon production achieved in Alaska during the 1990s.

However, as explored elsewhere, this wild stock abundance has not been an unalloyed blessing. It occurred concurrent with enormous growth in farmed salmon and economic conditions that did not favor Alaska's salmon exporters. These factors are examined in this section.

[1] The ocean regime shift, which is now widely understood to have occurred during the late 1970's, had profound effects on the entire North Pacific and Bering Sea ecosystem – strongly favoring some species like salmon, halibut and groundfish, while negatively impacting others like shrimp and crab. The subject now of much scientific discourse is whether a reverse shift is happening.

MANAGERIAL

A major positive change for Alaska salmon fisheries occurred with the advent of Limited Entry in 1976. Controlling the number of entrants to the state's salmon fisheries was seen as a bold step toward eliminating the "tragedy of the commons" documented by Garrett Hardin, in which uncontrolled access to a common resource leads inevitably to over-capitalization and marginal profits for most participants. Despite its success, Limited Entry was quite controversial and remains so today with some. Furthermore, the passage of time has exposed serious deficiencies in the system's ability to ensure economic viability for the salmon fisheries.

Part of the problem was that too many permits were initially issued. Further worsening of the situation by increased entry was prevented, but stabilization was achieved at total participation levels that have proved economically unsustainable. Provisions of Limited Entry law for determining the optimum number of entrants and adjusting numbers accordingly have proven extremely cumbersome. The net effect is that very few Limited Entry fisheries have been able to rationalize in response to often, severe economic dislocation.[2]

HARVESTING & PROCESSING TECHNOLOGY

In recent years new investment in the Alaska salmon industry has slowed to a near standstill. The period from the mid-1970s through the early 1990s, however, saw many significant changes.

On the harvesting side most fisheries saw dramatic evolution in the size and catching power of fishing vessels, despite regulations intended to forestall just such increases. New materials like fiberglass (FRP) and aluminum gave designers much more freedom with hull forms. Diesel engines became progressively lighter and more powerful. Improved gear was accompanied by better deck machinery. The now famous (or infamous) evolution of Bristol Bay gillnet vessels is perhaps the most dramatic example. The Bristol Bay fishery has a 32' overall length limitation intended to control fishing power. In 1970, a typical "Bay boat" would have been a 32' wooden vessel drawing 3', having a 8' or 9' beam, and powered by a 100 horsepower gasoline engine, capable of 8 knots and carrying 3 to 4,000 pounds of salmon. By 1990, new boats were still 32' with 3' draft, but most new vessels were of aluminum, with 400 to 500 hp engines capable of speeds in excess of 20 knots, and able to carry 25,000 pounds.[3]

The dramatic catching power increases that the new generation of vessels afforded fishermen created an upward spiral of investment that highlighted one of the chief failings of Limited Entry. Control of the number of individual participants alone did little to slow the increase in overall effort. In a phenomenon often called "capital stuffing," each individual fisherman still had an entirely rational incentive to invest more in catching power, even though collectively the continued investment was irrational.

Following Limited Entry, there was also a surge in capital investment in the processing sector. In part this was in response to rebounding stocks, but there was also a strong move by Japanese companies buoyed by the then surging Japanese "economic miracle." Substantial investments were made in freezing technology to produce headed and gutted (H&G) frozen salmon. Lead by strong Japanese

[2] The exceptions prove the rule. These are Clarence Strait and Chatham Strait blackcod , Southeast Alaska dive shellfish, scallops, and (for a period) Sitka Sound herring seine. Of the salmon fisheries, the Chignik salmon seine cooperative, which started during the 2002 season, stands out as the only "rationalized" fishery. Furthermore, the Limited Entry system – originally developed in response to problems in salmon fisheries – has been extended to other state managed fisheries with less than ideal results, despite the fact that demonstrably superior systems exist. The success of the federally managed halibut and sablefish IFQ systems have demonstrated the clear advantage of individually transferable quota systems for fisheries that can be managed on a total allowable catch (TAC) basis. Alaska under the Knowles administration, however, was opposed to this management option.

[3] Other particularly dramatic changes occurred in the seine fisheries with the advent of steel and FRP superseiners, and the specialized shallow-draft FRP seiners designed for Chignik and popular in Cook Inlet, Kodiak and Prince William Sound.

demand, salmon prices surged to new highs even as runs increased. A zenith was achieved during the period 1987 through 1993, when Bristol Bay sockeye prices reached more the $2.00 per pound ex-vessel ($2.72 in 2003 dollars). The extraordinarily strong Japanese market coupled with the lack of significant competition had Alaska salmon fishermen in an ebullient mood. Coming from the depths of 1975, this was a remarkable turn of events for a brief period of time.

GROWTH IN FARMED PRODUCTION

Ocean net pen rearing of salmon - what we now commonly call "salmon farming" - began in the 1970s. This emerging industry was based largely on science developed in the United States, but was pioneered commercially in Norway. Norway remains the "powerhouse" in salmon farming to this day, although, that was not foreseen by its initial entrepreneurs and by the Norwegian government 30 years ago.

Norwegians saw salmon farming as an ecologically-benign, economically-attractive alternative for many coastal fishermen who were being displaced due to technological and biological changes in traditional capture fisheries. Theirs was most definitely a "small is beautiful" vision - hundreds of "mom and pop" salmon farms dotting the Norwegian fjords, all raising high-quality, high-value salmon for the white tablecloth restaurant trade.[4] The target price point was above that of wild caught Atlantic salmon and the premium, competing Pacific species—chinook and coho. Salmon farming was thought of as a means of reducing pressure of severely diminished stocks of wild Atlantic salmon.

Initially this appealing scenario proved true. Limited availability and high demand, coupled with consistent quality and freedom from the seasonality of wild salmon helped farmers earn high prices. The industry was helped by strong support from the Norwegian government in terms of applied science, financing, and highly-organized marketing.

On the other side of the farmed versus wild salmon divide, there were often equally distorted views of the farmed salmon industry. Wild salmon fishermen and processors first ignored the fledgling farming industry. Then, as it grew rapidly, they came to see it as an unstoppable international industrial behemoth with unlimited capital, equally unlimited growth potential, insurmountable quality and marketing advantages, and implacably intent on wiping out the wild salmon industry. This view is as incorrect as farming advocates' initial "rosy scenario."

Surprisingly, the farmed salmon industry quickly became a victim of its own success. The high prices and growing market demand brought a flood of new entrants. Other countries with suitable conditions sought to exploit opportunities the Norwegians had created. Despite burgeoning demand for salmon worldwide, a relentless spiral of cost cutting and consolidation ensued. "Mom and pop" salmon farming is long since over in Norway. Hundreds of bankruptcies resulted in intense consolidation. Today, the Norwegian industry is dominated by just a few large firms—PanFish, Stolt SeaFarms, Fjord Seafoods, and Statkorn Holdings being the largest.[5] Competing with each other, these firms expanded to other potential production areas, buying up much of the emerging local industries in Scotland, Ireland, Iceland, Canada and—most famously—Chile. They were joined in this "gold rush" of development by other deep-pockets players, most notably the

[4] This small-scale development vision is still widely touted for new aquaculture activities worldwide. This, despite the clear historical evidence in salmon, shrimp and other species that successful aquaculture schemes tend to quickly evolve into large-scale, highly competitive industries operating on narrow margins. Since this experience also holds true in other food producing industries, one wonders why promoters cling to a view that can only be described as "romantic."

[5] The 2000 figures (Intrafish) show these four firms at the top of the Norwegian industry and ranked number 2 through 5 in the world. Netherlands-based Nutreco is number 1. Stolt is technically based in land-locked Luxembourg, but this is strictly for tax purposes. Of the top 20 firms worldwide, 10 are Norwegian, and they account for 56% of the "top 20's" production. Another 22% are accounted for by Nutreco alone. Seven Chilean firms round out the "top 20", with Salmones Pacifico Sur ranked 6th worldwide.

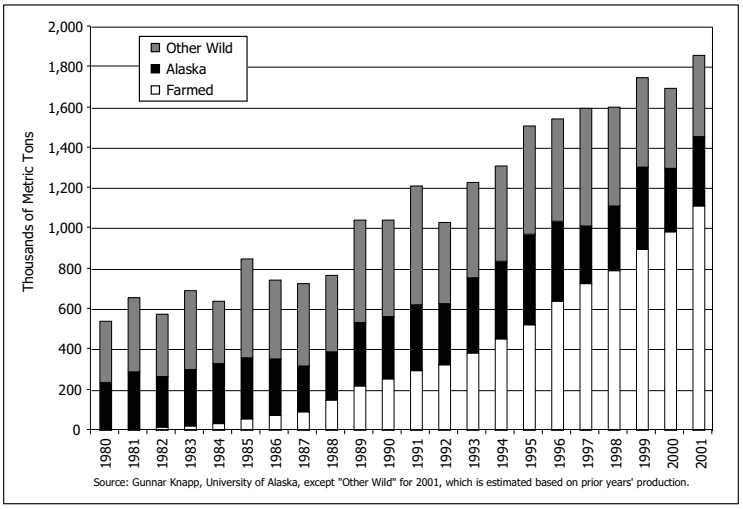
Dutch giant Nutreco, which today is the world's largest producer. The result is the highly internationalized salmon farming industry that produces a commodity protein in direct competition with industrialized chicken, pork, and beef. From a mere "blip" in the 1980 statistics, farmed salmon now dominates worldwide salmonid production with more than 60% of the total.

Figure 203.
World Salmon Supply Wild and Farmed, 1980 - 2001

X 1,000 metric tons					% of total		
YEAR	Alaska	Other Wild	Farmed	Total	Alaska	Other Wild	Farmed
1980	231	304	7	542	43%	56%	1%
1981	277	371	12	660	42%	56%	2%
1982	254	305	16	575	44%	53%	3%
1983	281	391	24	695	40%	56%	3%
1984	296	310	37	644	46%	48%	6%
1985	302	488	59	848	36%	57%	7%
1986	274	393	79	746	37%	53%	11%
1987	228	409	95	731	31%	56%	13%
1988	240	381	150	771	31%	49%	19%
1989	313	509	221	1,043	30%	49%	21%
1990	310	479	255	1,044	30%	46%	24%
1991	323	593	298	1,214	27%	49%	25%
1992	307	399	324	1,030	30%	39%	31%
1993	377	470	383	1,231	31%	38%	31%
1994	384	469	456	1,309	29%	36%	35%
1995	449	534	527	1,510	30%	35%	35%
1996	393	511	642	1,546	25%	33%	42%
1997	286	582	728	1,596	18%	36%	46%
1998	323	485	793	1,601	20%	30%	50%
1999	408	443	896	1,746	23%	25%	51%
2000	320	397	983	1,700	19%	23%	58%
2001	347	400	1,113	1,860	19%	22%	59%

Source: Gunnar Knapp, University of Alaska, except 2001 "Other Wild", estimated from previous year.

Figure 204.
World Salmon Supply: Wild and Farmed



This phenomenal growth, however, has not been without difficulties. Constant, intense competition drove farmed prices to very low levels and resulted in major bankruptcies and deep financial losses. In one of the more celebrated cases, PanFish saw its publicly traded stock plummet from near $70 per share to less than $.70. Although prices have recovered somewhat, and most analysts believe that the industry will stabilize, it is certain that farmed salmon will remain a highly price-competitive commodity

industry with narrow margins typical of similar food industries. This is a far cry from what industry pioneers envisaged.[6]

Proponents of commercial salmon aquaculture did not envision a global, commodity industry that is dominated by a few highly-integrated, multinational corporations and relentless competition for market share and ever tightening cost/price squeeze. They also did not foresee the ecological impacts, food safety, or, simply, quality issues that now attend the farmed salmon industry. The wild salmon industry did not appreciate the enormous market that farmed salmon would develop, and has generally failed to capitalize on the opportunities created by salmon farmers.

The table and chart on the previous page, clearly show the dramatic growth of farmed salmon. In the 22-year period from 1980 through 2001 farmed salmon production increased 60 fold from a mere one percent of the world's supply to some 60 percent and still growing.[7]

IMPACTS OF FARMED SALMON ON ALASKA

The effects of farmed salmon on the Alaskan wild harvest salmon fishery have been profound. To date, those effects have been almost entirely negative. Fundamental weaknesses in our existing industry have been exposed under harsh competitive conditions.

How has farmed salmon affected the market? Its main effect has been to roughly triple overall salmon consumption. It has also transformed product preferences. The wild salmon market was primarily canned and frozen H&G, with a small, seasonal fresh salmon component. Farmed production provided fresh fish year round—primarily dressed whole fish at first, but more and more as finished fillets. Simply put, the product mix offered by the wild salmon industry was no longer competitive.

The attractiveness of farmed salmon to retailers and re-processors stemmed from a number of factors including overall quality, consistency of supply, and elimination of inventory requirements. In addition, as stiff competition within the industry led to progressively lower prices, retailers enjoyed excellent sales margins. In pure business terms, wild salmon has faired poorly in competition. By and large, the industry has yet to respond effectively to quality imperatives, and has failed to provide a counter to the convenience factor of farmed salmon. Wild salmon producers initially tried to compete with farmed salmon with lower prices—essentially conceding the quality and retail consumer advantages to farmers. This strategy was doomed to failure as a falling farmed price "ceiling" squeezed margin from the wild fisheries. In this price squeeze, fishermen have suffered most. The charts on the next page demonstrate that as processors struggled to maintain their own margins the "only place to go" was the ex-vessel price.

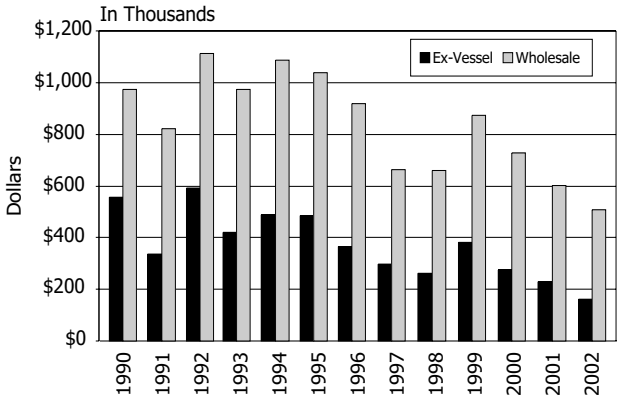
GENERAL ECONOMIC INFLUENCES

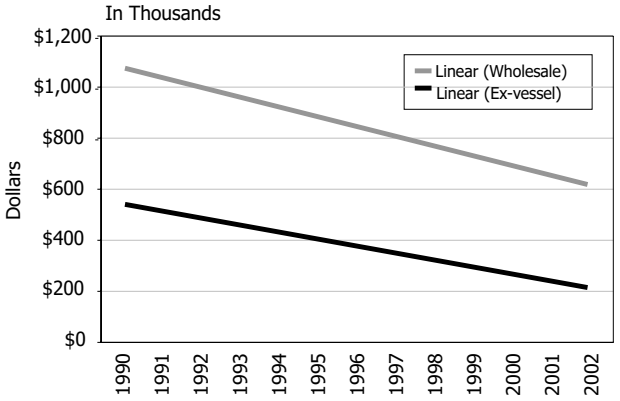
Despite farmed salmon's real and perceived market advantages during its phenomenal growth years of the 1990s, the economic success of the industry was not wholly due to competitive factors of its own making. General world economic conditions and specific changes in the relative economic positions of key producing countries vis à vis principal importers had dramatic impacts for both farmers and wild salmon producers. The general strength of the United States economy

[6] Efforts to develop fish farming for other species such as halibut, sablefish (blackcod) and Atlantic cod are being impacted by the development history of farmed salmon. Investment bankers were badly burned by salmon and are certain to scrutinize profit projections much more carefully. The flood of capital that fueled farmed salmon growth is unlikely to occur with these species. Moreover, wild producers and governments are much more keenly aware of the problems that accompanied the rapid, unrestrained growth in farmed salmon. Bankers and regulators are being more cautious with new aquaculture ventures.

[7] Data: Salmon Market Information System, World Salmon Supply Database, Dr. Gunnar Knapp, except 2001 "Other Wild" category which is an estimate based on the previous year. Note that the figures for farmed salmon do not include "salmon trout" (Oncoryhnchus mykiss), which accounts for an estimated additional 150, 000 metric tonnes of salmonids, for a world total of roughly 2 million metric tonnes.

Figure 205.
Alaska Salmon, Ex-Vessel Versus Wholesale Value, 1990-2002.





The spread between ex-vessel value and first wholesale remained fairly constant, whereas ex-vessel value has steadily declined. This indicates that the harvesting sector has borne the brunt of the overall value decline in Alaska's wild salmon fisheries. During the years 1990 - 95, the ex-vessel value typical comprised 48% of the first wholesale value. From 1996 through 2001 that figure slid to 41%, then plummeted to just 32% in 2002.

was a boon to salmon farmers; helping to fuel the growth of world farmed salmon production throughout the 1990s. Conversely, the strength of the U.S. dollar against key trading currencies hurt Alaska salmon exporters.

Imports account for the great majority of the farmed salmon consumed in the U.S. with Norway, Canada, and Chile being the principal suppliers. The U.S. dollar appreciated dramatically against these countries' currencies during the ten-year period—1993 through 2002—up 22% against the Canadian dollar, as much as 27% against the kroner, and up to 213% against the Chilean peso! Canadian and Norwegian seafood companies that were already well established in the U.S. market performed very well during this period. Chile, only a bit player in U.S. seafood imports at the beginning of the 1990s, saw its exports to the U.S. mushroom with almost all the growth coming in farmed salmon.

Figure 206.
Key Foreign Currency Exchange Rates (Annual Average), Federal Reserve Report G.5A*, except CLP data from Royal Bank of Canada and CIA World Fact Book, currency Units per US Dollar.

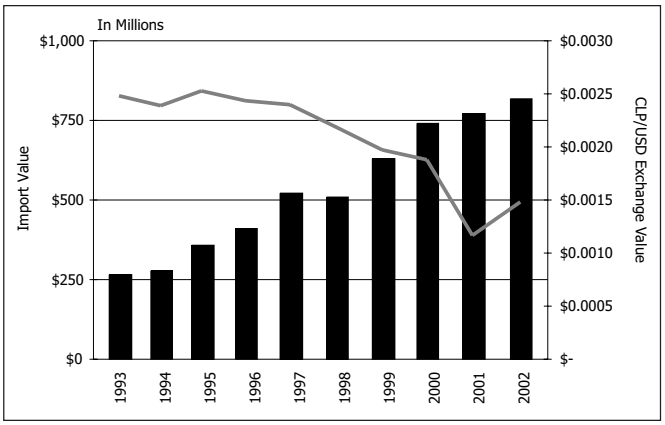
Country	Unit	Symbol	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Canada	Dollar	CAD	1.29	1.37	1.37	1.36	1.38	1.48	1.49	1.49	1.55	1.57
Chile	Peso	CLP	404	420	397	412	419	460	509	536	862	679
EMU Members	Euro	EUR	0.86	0.84	0.77	0.80	0.88	0.89	0.94	1.08	1.12	1.06
UK	Pound	GBP	0.67	0.65	0.63	0.64	0.61	0.60	0.62	0.66	0.69	0.67
Norway	Kroner	NOK	7.10	7.06	6.34	6.46	7.09	7.55	7.81	8.81	9.00	7.98
Japan	Yen	YEN	111	102	94	109	121	131	114	108	122	125
South Korea	Won	KRW	806	807	773	805	948	1400	1190	1131	1292	1250
China, P.R.	Yuan	CNY	5.8	8.6	8.4	8.3	8.3	8.3	8.3	8.3	8.3	8.3
Taiwan	Dollar	TWD	26.4	26.5	26.5	27.5	28.8	33.5	32.3	31.3	33.8	34.5

*Average Annual Exchange Rates as Certified for Customs Purposes by the Federal Reserve Bank of New York

In the 1993-2001 period Chilean farmed salmonid production increased 360%, from 77,446 to 357,000 metric tonnes. Chile produces three principal species—Atlantic salmon, coho, and salmon trout.[8] Atlantic salmon production comprised roughly 50% of the Chilean total and was overwhelmingly (two-thirds) directed at the U.S. market, in fresh whole dressed fish, and increasingly in fresh, fillet forms. The coho (27%) and salmon trout (22%), that comprised the other half of total Chilean production, was almost all frozen and exported to Japan.[9]

Particularly interesting about the development of Chile's industry is its demonstrated ability to exploit different markets with particular species and product forms. The dramatic devaluation of the peso made Chilean salmon exports to the U.S. super-competitive, which allowed them to push aside U.S. wild salmon competition, and seriously undercut Canadian and Norwegian imports of farmed Atlantics. (See the chart to the left.) At the same time, burgeoning coho and salmon trout exports to the traditional, Alaska sockeye "stronghold" of Japan benefited from a peso that was weakening dramatically against the yen. At the same time Alaska sockeye producers were contending with a strengthened dollar that made exporting more difficult.[10]

Figure 207.
Growth of Chilean Salmon Imports to the U.S. Versus Weakening Chilean Peso Against U.S. Dollar.



The dramatic decline in Alaska sockeye exports to Japan is shown relative to the exchange positions of the Chilean peso and U.S. to the yen. It is interesting to note that

Figure 208.
Value of Alaska Sockeye Exports to Japan Versus Devaluation of the Chilean Peso to the Yen.

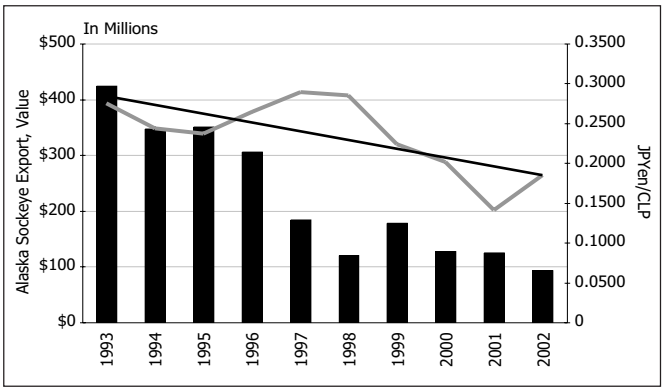
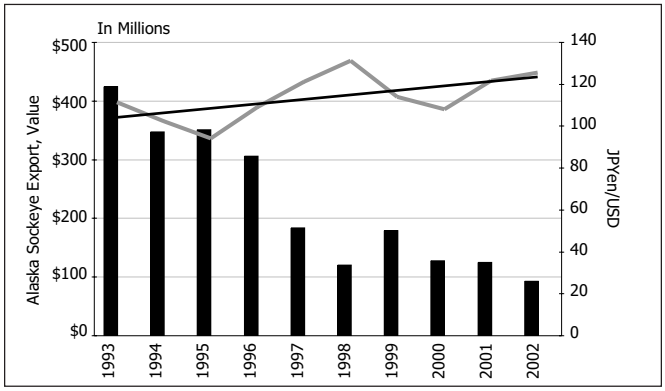


Figure 209.
Value of Alaska Sockeye Exports to Japan Versus Devaluation of the Yen to the U.S. Dollar.



[8] Steelhead trout (Oncorhychus mykiss).

[9] Source: "Salmon Markets"; Bjørndal, Trond and Gunnar Knapp, Norwegian School of Economics, Bergen and University of Alaska, Anchorage, 2000. Exports to Japan were comprised of 99% of the 97% frozen coho and 94% of the 93% frozen salmon trout.

[10] The competitive export advantage afforded Chilean producers by the weakened peso was, of course, offset by certain higher costs for aquaculture technology and imported smolt and feed. Overwhelming, though, it was advantageous to them in penetrating Alaska's domestic and principal export markets. Another interesting sidelight of the weakened peso was that it made the purchase and consolidation of much of the Chilean industry by multinational salmon aquaculture giants like Nutreco, PanFish, Fjord and Stolt much easier and less costly.

there was a general decline in sockeye run size during this period. Normally, this should have led to an increase in export value. It did not, which clearly demonstrated that Alaska had been relegated to a residual price taker in that market. Indeed, the decline in exports to Japan was so dramatic that Alaska producers resorted to putting more sockeye into lower value, canned production despite weakened run strength.

WHAT TO DO

Many Alaskans ask, "How can we get back our lost market share?" We cannot! Alaska's wild salmon production is limited by the ocean's natural carrying capacity. We cannot increase our percentage *share* of the total market, so that should not be our focus.

Others want to attack farmed salmon on environmental and health grounds in the hope of destroying its appeal in the market, and that it will somehow "just go away." It will not! Farmed salmon is here to stay. The competition within the farmed salmon industry will further teach the industry to correct problems and to be innovative.

Given the beating that Alaska wild salmon fishermen and processors have taken from farmed salmon, some advocate that Alaska should admit defeat, rescind its ban on finfish farming, and get into the farmed salmon game. This would be a mistake. Alaska enjoys no competitive advantage over the other farmed salmon regions, and is years behind in development. Moreover, we have seen that salmon farming is not the panacea for coastal community development it was touted to be. In fact, farmed salmon is low margin, high volume, big company "aquabiz," and poses numerous environmental challenges. At best, we could expect little more than to be a production zone for the same big international companies that already dominate farmed salmon in Norway and Chile.

So, what can Alaskans do? Windows of opportunity for Alaska are important, but may be fleeting. First and foremost, we must build on our strengths - our sustainable resource, our world reputation as careful and effective managers of healthy, productive, wild stocks, our pristine environment, and the fundamental cost of production advantage inherent in the wild fish. We do not have to feed our fish! They are a gift from nature.

We should realize that farmed salmon has created enormous new consumer demand for high quality salmon products and has established salmon as a year-round menu item. Alaskans can capitalize on this market growth by reducing operating costs, resolving our quality problems with a "top to bottom" commitment to quality from saltwater to the consumer's plate, and by responding to consumer demand with new, more attractive products.

Conventional economic wisdom has it that when a producer loses controlling market share it becomes a "price taker" rather than the "price maker." That is the position in which Alaska now finds itself. In a

Figure 210.
Alaska Salmon Compared to World Salmon Production, 7-Year Average Production ('95 - '01) Versus Current Total World Samonid Production Estimated at 2.1 Million M/T

SPECIES	Metric Tons	% of Alaska Production	% of World Production
Chinook	4,136	1.14%	.20%
Coho	16,323	4.48%	.78%
Sockeye	103,806	28.49%	4.94%
Chum	77,452	21.26%	3.69%
Pink	162,619	44.63%	7.74%
TOTAL	**364,336**	**100.00%**	**17.35%**

commodity salmon market, farmed salmon is the dominant product and will set the price. The only way to modify this equation is to distinguish wild salmon from farmed and re-position wild outside the commodity status. Happily, consumers and the salmon farmers themselves are doing much of this for us.

People are concerned about environmental degradation caused by farms. They are worried about diseased fish, GMOs, PCBs, and antibiotics in farmed salmon feed. [11] Beyond that, they are getting bored with farmed salmon – fish that has gotten progressively cheaper, but also fattier, flabbier, and blander. Consumers are evermore interested in natural products. They want to know where their food came from, who harvested it, and the sustainability of fish stocks. They want food that tastes good, but appeals to their sensibilities as well as their taste buds.

Re-processors turn farmed salmon into a myriad of consumer-ready products - lox, patés, ready meals, and a host of others. They now have renewed interest in wild because consumers are demanding it, because farmed salmon has become progressively poorer material and is a completely "known" commodity. The growth of new farm salmon markets are slowing with an annual consumption growth rate of 3% in key markets. Re-processors, brokers, and others in the marketplace need something interesting, and are showing strongly renewed interest in wild salmon.

These are new realizations for many in the wild salmon and among decision-makers charged with revitalizing Alaska's salmon dependent coastal economy.

We need to be clear with the fact that "Alaska salmon" is not a single, interchangeable commodity and act accordingly to properly position our five unique species in the world markets. The table to the left illustrates this point.

- Alaska chinook salmon comprise scarcely 1/5 of 1% of total world production. Our system is simply failing when this premium fish earns fishermen as little as $.25 per pound in some fisheries.
- All three of our top "white table cloth" species—chinook, coho, and sockeye—together comprise less than 6% of all salmon produced. This is truly "niche" status. All of this product should be going to top-end markets?
- Chum - regarded as a mass-market species—is a scant 3.7% of the overall market. It makes the premium salmon caviar, which covers virtually the entire cost of production. The flesh is essentially free to the processing line. Surely it can carve out a viable niche in reprocessing food items.
- Pinks do not compete head to head with farmed salmon. Why is it that 6 oz. cans of pink salmon—produced from $.9 per pound ex-vessel fish—routinely retail for more than $1.50, and tuna, which earns fishermen $.45 to $.50 per pound, typically sells in supermarket's for less than $.75 for a 6 oz. can?

These and countless other examples demonstrate that Alaska's old supply driven "sell the pack" business model is a thing of the past. The market is now requiring us to become demand driven. We must place great care on meeting our customer's needs for quality.

Alaska can revive its salmon industry by subscribing to a high-quality, high-value strategy. Such a strategy must clearly differentiate our premium species from farmed salmon at the top of the market, while offering a cost competitive wild, natural alternative in the mass market with our lower priced pinks and chums.

[11] GMOs are "genetically modified organisms". EU regulators have identified toxic polychlorinated bi-phenyls (PCB) at elevated levels in farmed salmon feed derived from fishmeal using North Atlantic pelagic fish such as herring.

Part IV. Limited Entry Permit Transfers: A Survey

Purpose

The purpose of this survey is to develop a general understanding of the economic factors that have motivated Alaska fisherman to leave the salmon fisheries. While other elements of the Alaska Salmon Industry Baseline Study examined certain objective measures of economic trends in the industry. This survey focused on the subjective response to those economic trends by fishermen as reflected in their expressed reasons for transferring their salmon permits. The survey collected data on the transfer of salmon permits by Alaska residents during the period from 1980 to 2000.

Data Collection

Data was collected through telephone interviews with individuals who had transferred a limited entry permit. The Alaska Commercial Fisheries Entry Commission (CFEC) provided a list of names and contact information of all persons who were involved in permit transfers in the years 1980, 1985, 1990, 1995, and 2000. To eliminate non-economic and non-resident factors from the survey, all emergency transfers were removed from the CFEC list, as were those individuals with addresses and phone numbers outside Alaska. The resulting list included 811 names for 1980 and approximately 1,000 names for each of the other years. The lists were randomized for each year before interviews were conducted.

Seven hundred numbers were dialed from each list, resulting in a total of 426 successful interviews. The chart below provides details on call statistics. Out of the 3,500 attempted calls, an average of about 45 percent were not answered, 14 percent were not in service, seven percent were wrong numbers and four percent were busy. Since the time they had transferred, about 1 percent of permit holders had passed away, and no information was gained from surviving family members. The CFEC lists of permit transfer activity did not distinguish between those individuals who transferred permits and those who received them. Consequently, there was an unknown number of permit recipients in the call lists. Of all those called, about five percent were recipients. About 12 percent of calls (ranging from 11 percent of the 1990 list to 15 percent of the 1995 list) resulted in successful interviews with the target group: those who had transferred a salmon permit. In a number of cases, the permit holder was not available, but a close family member was able to provide the requested information.

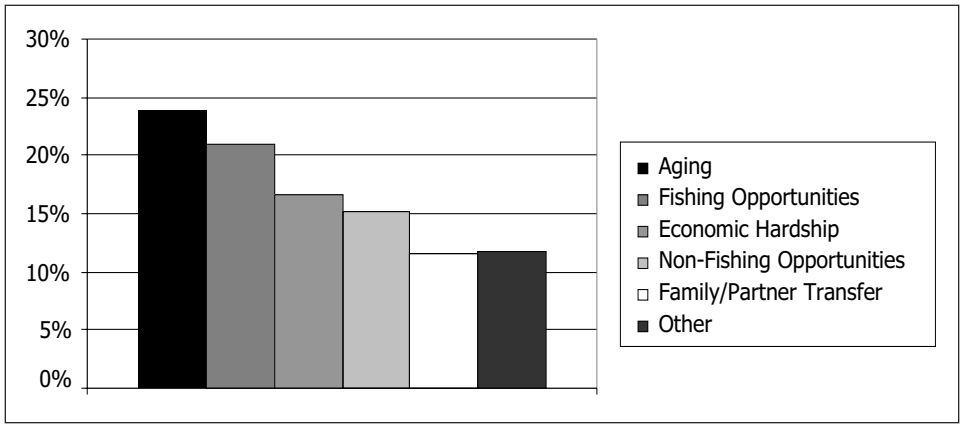
Figure 9.
Call Statistics

Call Statistics	1980	1985	1990	1995	2000	Average, All Years	
Not Answered	47.1%	42.4%	40.0%	46.7%	49.4%	45.1%	
Not in Service	14.4%	13.4%	11.9%	13.3%	15.7%	13.7%	
Wrong #	8.7%	9.9%	6.9%	5.9%	4.9%	7.2%	
Busy	2.3%	3.6%	4.7%	5.3%	4.4%	4.1%	
Received	3.6%	3.1%	4.7%	5.6%	6.0%	4.6%	All Years
Deceased	1.1%	1.6%	0.7%	1.6%	0.3%	1.1%	
Total Interviews	83	80	75	101	87	85.2	426
Percent Interviewed	11.9%	11.4%	10.7%	14.4%	12.4%	12.2%	12.2%

Survey Issues

Several survey methodology issues should be noted. One issue is that the phone numbers used to contact permit holders were those on file with CFEC at the time of the permit transfers. Consequently, some phone listings were up to 23 years old. Therefore, those individuals who were successfully surveyed, particularly those from earlier year groups, may tend to represent a segment of permit holders who were more stable in their residency lifestyle than permit holders in general. It is possible that this introduced some bias in the reasons given for transferring a permit. On the other hand, the percent of successful interviews from the same number of total calls each year was not appreciably smaller for early year groups than for later year groups. Another issue is that the inherent subjectivity of the interview process may have resulted in some biased responses. When given the opportunity to speak with a representative of the state regarding the salmon industry, some former permit holders may have slanted their reasons for transferring in order to emphasize a particular point. Furthermore, some fishermen may not have remembered the precise reason for their transfer at the time it took place, particularly when up to two decades separated them from their original transfer.

Figure 10.
Six Major Permit Transfer Categories, All Survey Years Combined.



Summary of Survey Findings

While the survey identified 20 more or less distinct groupings of reasons for transferring permits, these reasons can essentially be summarized in six major categories: Aging, Fishing Opportunities, Economic Hardship, Family/Partner, Non-Fishing Opportunities and Other. Among the total interviews (all years combined), 24 percent fell into Aging, 21 percent into Fishing Opportunities, 17 percent into Economic Hardship, 15 percent into Non-Fishing Opportunities, 12 percent into Family/Partner and 12 percent into Other. A more detailed discussion of the survey findings, based on the set of 20 categories of reasons for transfer, are presented in Appendix C of this paper.

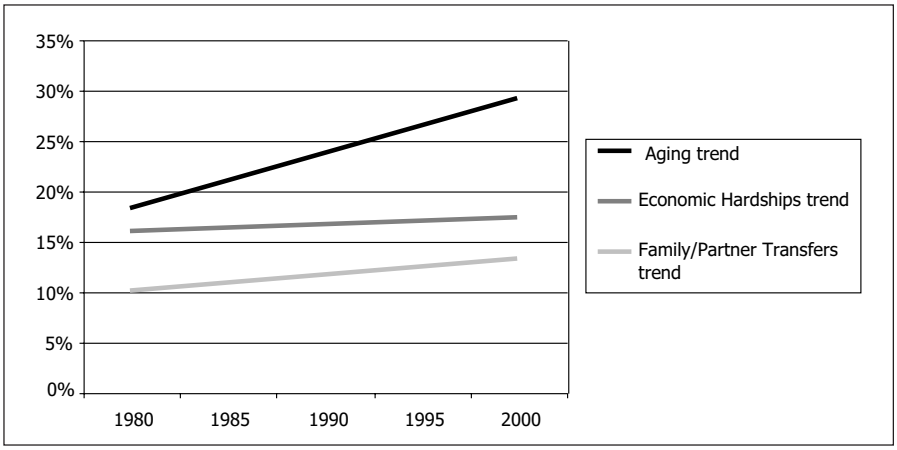
During the period from 1980 to 2000, the Aging category increased significantly in representation while the categories of Family/Partner and Economic Hardships increased moderately. Both Fishing Opportunities and Non-Fishing Opportunities followed a downward trend from 1990 to 2000.

In each of the years examined, most permits were transferred to Alaskans. In those cases where the residency of the recipient was identified, about 97 percent of recipients were Alaskan. In 1980, about 70 percent of permit transfers were sales, and 30 percent were gifts. However, over the period of this study this situation steadily changed, and by 2000 it was reversed so that only 45 percent were sales and 55 percent were gifts.

The six major categories of permit transfers reasons were also examined based on the permit holder's region of residence. To provide for comparison with the salmon industry trends presented earlier in this report, which were based on census areas, a number of larger regions were constructed by aggregating sets of Alaska census areas. The regions selected for this purpose were: Western (Aleutians East, Aleutians West, Bethel, Bristol Bay, Dillingham, Lake & Peninsula, Nome, Northwest Arctic, Wade Hampton and Yukon-Koyukuk census areas); Gulf Coast (Kenai and Valdez-Cordova); Kodiak (Kodiak Borough); Southeast (Haines, Juneau, Ketchikan, Prince of Wales, Sitka, Skagway, Wrangell-Petersburg and Yakutat); and Urban (Anchorage, Matanuska-Susitna and Fairbanks). To provide a more local perspective of the survey responses, Appendix D of this report presents the survey findings on the basis of 12 smaller regions.

Several distinct trends appear when responses are examined by these regions. In Western Alaska, 38 percent of responses fell into the Aging category, indicating that a large number of residents maintained ownership of their permits into retirement age. By contrast, far fewer responses in the other four regions fell into this category. The representation of respondents falling into the Fishing Opportunities category was high in Southeast, Gulf Coast, Kodiak and Urban Alaska (more than 20 percent of each group), but represented only six percent of the responses for the Western region. Economic reasons for permit transfers were also more prevalent outside Western Alaska. Just over 11 percent of respondents from Western and Urban Alaska indicated that they transferred their permit in order to pursue Non-Fishing Opportunities, while only half as many fell into this category in the Gulf Coast, Southeast, and Kodiak regons.

Figure 12.
Increasing Trends, Six Transfer Categories, Statewide.



Trends in Permit Transfers

Three of the six major transfer categories increased in prevalence across the state between 1980 and 2000. The Family/Partner category saw a strong increase, jumping from ten percent in 1980 to 16 percent in 2000, an increase of 68 percent. The Aging category also jumped dramatically from 25 percent to 33 percent, a rise of 32 percent. The representation of Economic Hardships climbed slightly, from 16 percent to 17

Figure 13.
Declining Trends, Six Transfer Categories, Statewide.

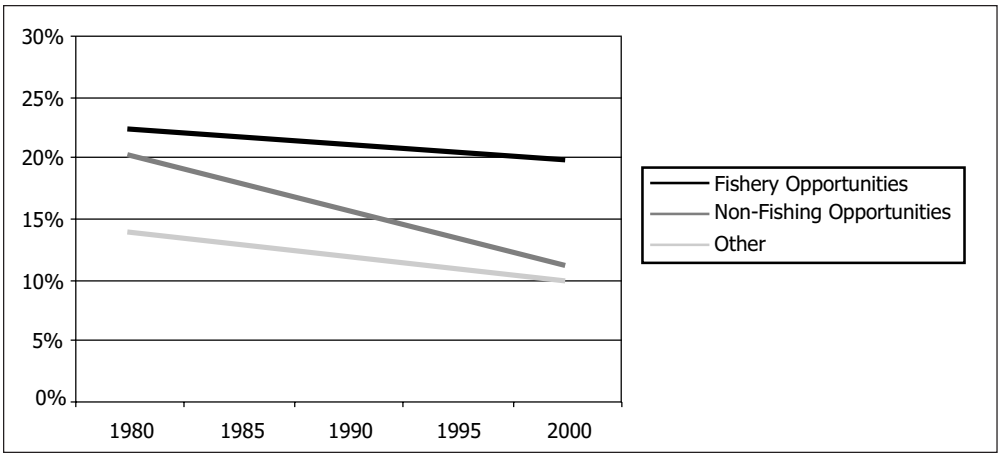
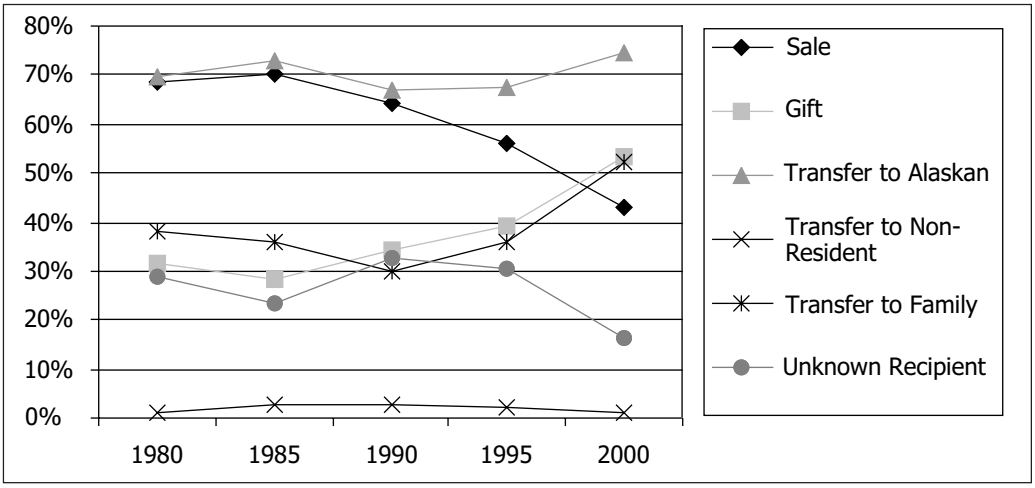


Figure 14.
Type of Permit Transfer, 1980-2000.



percent, during the same time.

The categories of Fishing Opportunities, Non-Fishing Opportunities and Other fell between 1980 and 2000. The Fishing Opportunities category dropped in representation from 21 percent to 14 percent, although in 1990 and 1995 its prevalence rose dramatically, ranking it as the number one reason for transfers during those two years. Non-Fishing opportunities held steady at about ten percent in 1980, 1985, and 1990 before falling to five percent by 2000.

Type of Permit Transfer

All respondents were queried about the form of their salmon permit transfers. Because those individuals involved in emergency and medical transfers had been removed from the list, this left only those who had sold or gifted their permit and those who had their permits repossessed. Additionally, after calling the first 100 names from each year, it was decided to ask the respondents whether they had transferred their permit to an Alaskan or to a non-resident. Because many of the first callers had volunteered this information, data was captured for all but a handful of interviews. The number of permit holders transferring to family members was also recorded.

Of those respondents who identified the residency of the person to whom the permit was transferred, very few said they had transferred their permits to non-residents, averaging two percent over all five time periods.

In 1980, about 70 percent of transfers were sales and 30 percent gifts; sales began decreasing and gifts began increasing in 1990 until, by 2000, the majority of transfers were gifts. The trend of transfers to family members closely matches the trend of gift transfers as nearly all gifts were to family members.

The following table presents details on the type of transfer for each of the years surveyed:

Figure 15.
Type of Transfer for Each Year Surveyed.

1980 Transfer Type	Total	% Total Transfers	Transfer to Alaskan	%	Transfer to Outsider	%	Transfer to Family	%	Recipient Unknown	%
Repossessed	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sold	54	68.4%	32	400.0%	1	12.5%	8	100.0%	20	250.0%
Gifted	25	31.6%	23	104.5%	0	0.0%	22	100.0%	3	13.6%
Total	79	100.0%	55	183.3%	1	3.3%	30	100.0%	23	76.7%

1985 Transfer Type	Total	% Total Transfers	Transfer to Alaskan	%	Transfer to Outsider	%	Transfer to Family	%	Recipient Unknown	%
Repossessed	1	1.2%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sold	57	70.4%	36	63.2%	2	3.5%	6	10.5%	19	33.3%
Gifted	23	28.4%	23	100.0%	0	0.0%	23	100.0%	0	0.0%
Total	81	100.0%	59	72.8%	2	2.5%	29	35.8%	19	23.5%

1990 Transfer Type	Total	% Total Transfers	Transfer to Alaskan	%	Transfer to Outsider	%	Transfer to Family	%	Recipient Unknown	%
Repossessed	1	1.4%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sold	47	64.4%	24	51.1%	2	4.3%	N/A	N/A	23	48.9%
Gifted	25	34.2%	25	100.0%	0	0.0%	22	88.0%	1	4.0%
Total	73	100.0%	49	67.1%	2	2.7%	22	30.1%	24	32.9%

1995 Transfer Type	Total	% Total Transfers	Transfer to Alaskan	%	Transfer to Outsider	%	Transfer to Family	%	Recipient Unknown	%
Repossessed	4	4.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sold	50	56.2%	25	50.0%	2	4.0%	2	4.0%	23	46.0%
Gifted	35	39.3%	35	100.0%	0	0.0%	30	85.7%	4	11.4%
Total	89	100.0%	60	67.4%	2	2.2%	32	36.0%	27	30.3%

2000 Transfer Type	Total	% Total Transfers	Transfer to Alaskan	%	Transfer to Outsider	%	Transfer to Family	%	Recipient Unknown	%
Repossessed	3	3.5%	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sold	37	43.0%	18	48.6%	1	2.7%	8	21.6%	10	27.0%
Gifted	46	53.5%	46	100.0%	0	0.0%	37	80.4%	4	8.7%
Total	86	100.0%	64	74.4%	1	1.2%	45	52.3%	14	16.3%

The Volatility of the Alaska Salmon Fisheries

The Commercial Fishing Entry Commission reports salmon catch and ex-vessel values (gross earnings) for each gear type within each regional fishery. As indicated in the charts below, all the major salmon fisheries are very volatile with increases or decreases of 50 to 100 percent not uncommon. The charts show annual catch in pounds, the unit price in dollars per pound and the distribution of gross earnings between residents and non-residents.

Figure 184.
Bristol Bay Total Catch and Unit Prices.

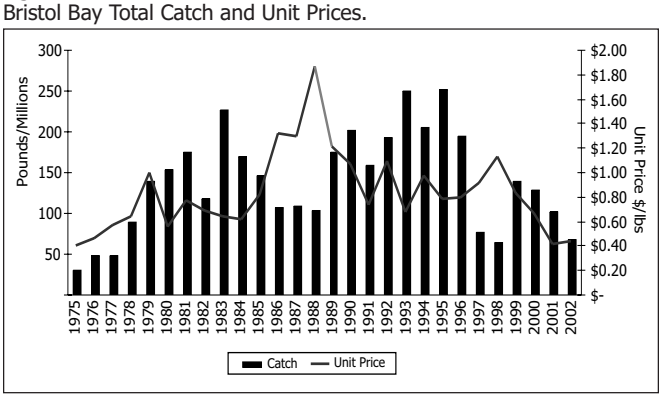


Figure 185.
Kodiak Purse Seine Catch and Unit Price.

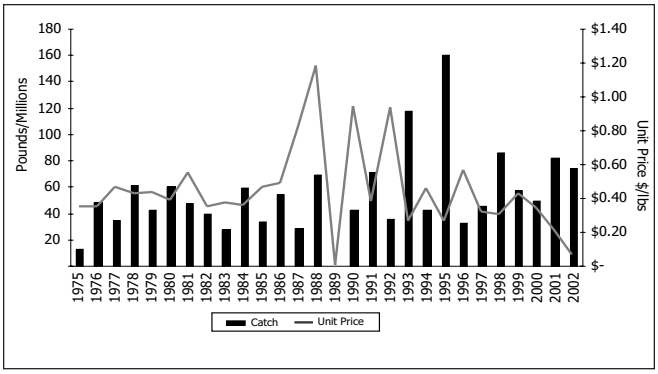


Figure 186.
Cook Inlet Drift Gillnet Catch and Unit Prices.

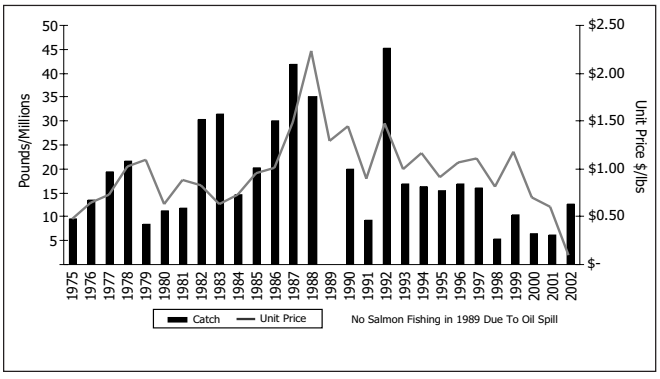


Figure 187.
Bristol Bay Commercial Fishing Gross Earnings.

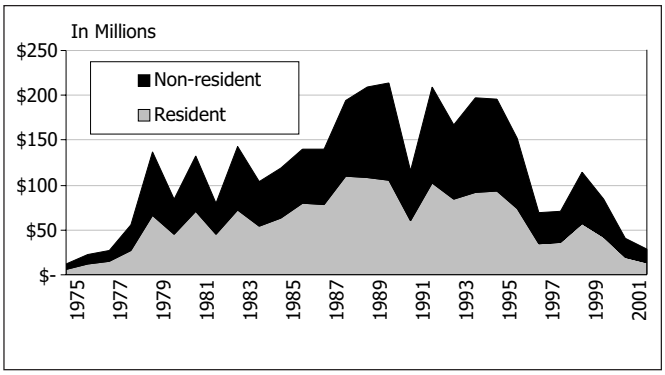


Figure 188.
Kodiak Purse Seine Gross Earnings.

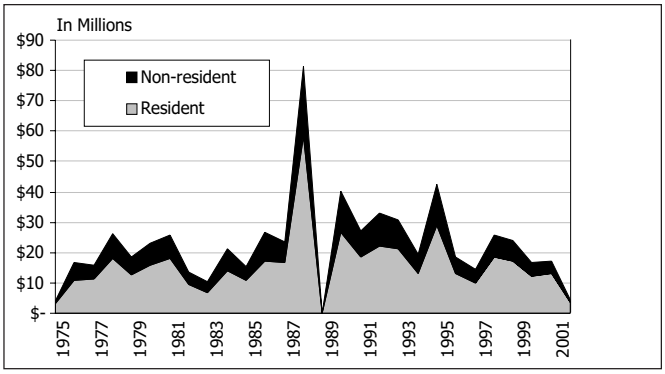
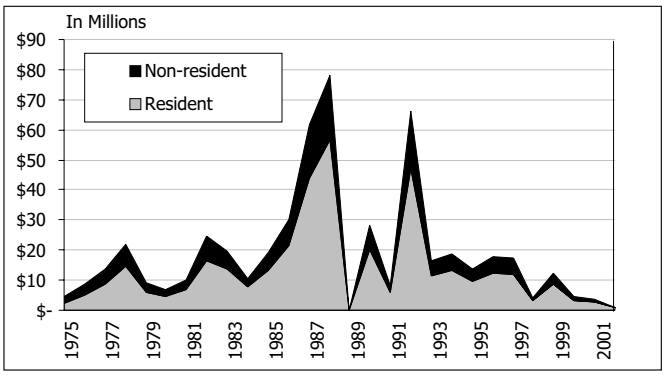


Figure 189.
Cook Inlet Drift Gillnet Gross Earnings.



Appendix A

Figure 190.
Southeast Purse Seine Catch.

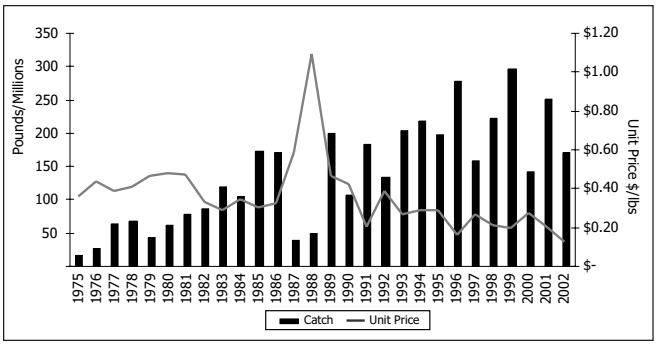


Figure 191.
Area M (Aleutians) Purse Seine Catch and Unit Prices.

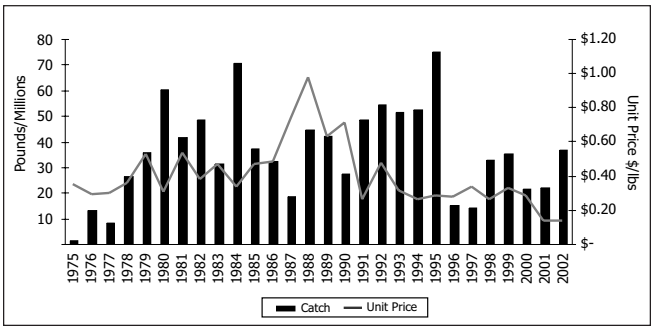


Figure 192.
Upper Yukon Set Gillnet Catch and Unit Prices.

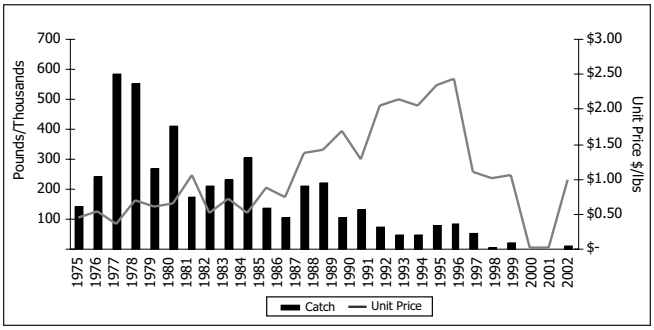


Figure 193.
Prince William Sound Purse Seine Catch and Unit Price.

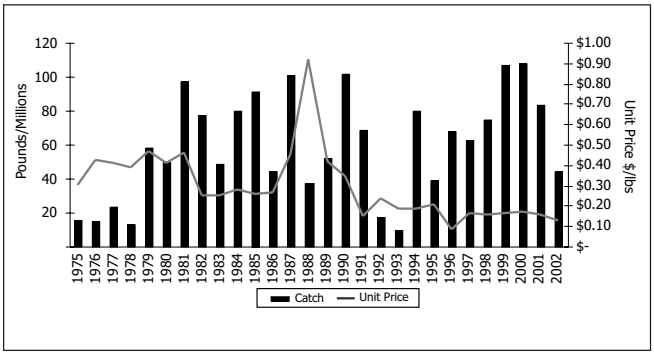


Figure 194.
Southeast Purse Seine Gross Earnings.

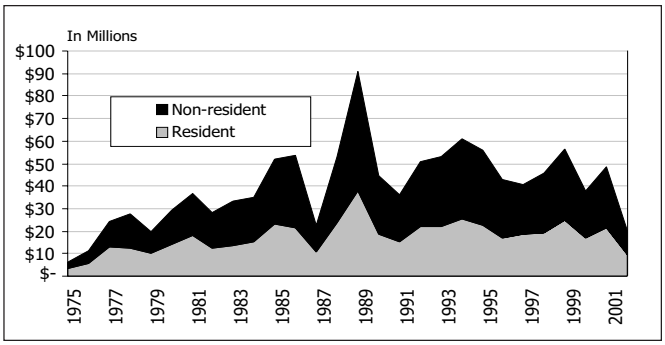


Figure 195.
Area M (Aleutians) Purse Seine Gross Earnings.

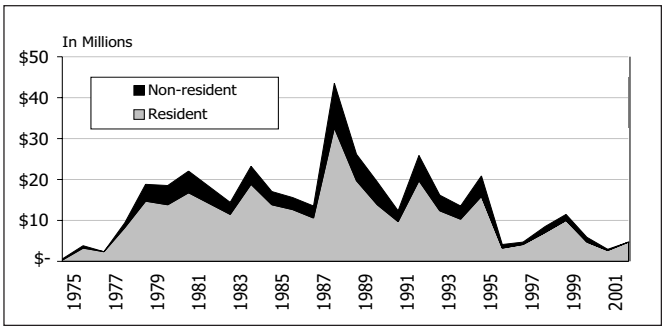


Figure 196.
Upper Yukon Set Gillnet Gross Earnings.

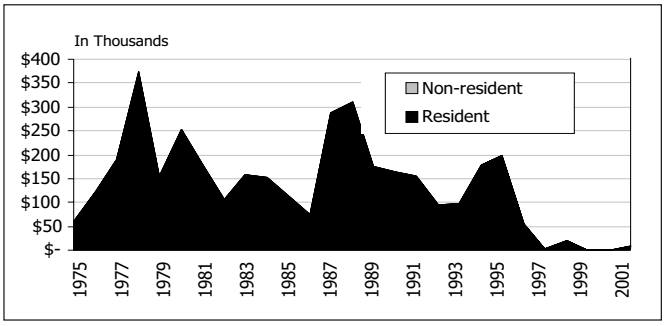
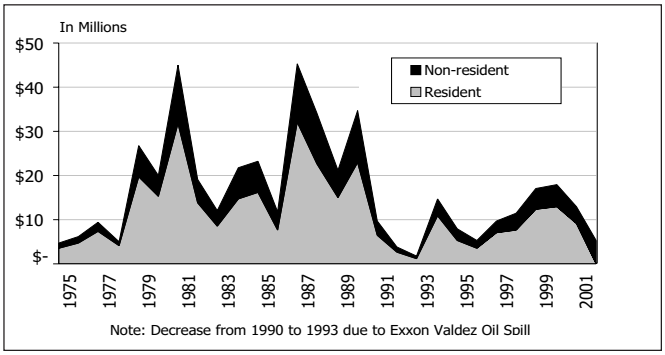


Figure 197.
Prince William Sound Purse Seine Gross Earnings.



Assumptions and Methodology for Determining Employment and Earnings Information

The Alaska Department of Labor and Workforce Development (ADOLWD) reports wages and salaries for most industries in the state in conjunction with the unemployment insurance program. Because the vast majority of commercial fishers are not covered by unemployment insurance, ADOLWD does not collect commercial fishing employment and wage information. For the purposes of this report it was necessary to determine personal income earned in commercial fishing on the same basis as wages and salaries reported for other industries.

Gross earnings for commercial fish sold in Alaska is collected and reported by the Alaska Department of Fish and Game (ADFG) and by the Commercial Fishing Entry Commission (CFEC). The gross earnings are represented by the ex-vessel (dockside) value of the fish sold. The ex-vessel values are reported for each census area and allocated between resident and non-resident fishers. Captain and crew shares (personal income) are paid out of gross earnings. For purposes of this study an assumed average of 48 percent of the ex-vessel value is paid out as personal income for all fisheries. Two recent reports have pegged the amount at 48 and 42 percent. Operators of certain gear types, such as set nets, may retain a higher proportion of their gross earnings (50 to 60 percent) since their maintenance and overhead costs are lower. However, until detailed information is available by gear type and region, there is no real basis to adjust this variable.

Since ADOLWD information on wages and salaries are reported as annualized monthly averages, the commercial fishing personal income also has to be expressed as an annual average. For purposes of this study, a five-month fishing season is assumed. Mathematically, total gross earnings from commercial fishing is multiplied by (4.5/12) to derive an annual monthly average.

ADOLWD reports statewide estimates for non-resident seafood processors. For seafood processing, wages and salaries were reduced by 51 to 71 percent to eliminate non-resident earnings. Statewide percentages were applied uniformly to the census area information. The distribution between salmon processing and all other processing was based on regional harvests by species and the wholesale value for salmon versus all other species.

Estimates for commercial fisheries and proprietors of tourism related businesses were added to the base of ADOLWD's employment and earnings information. For each census area, this information was allocated between three economic sectors: the economic base, private support and state and local government. This information was gathered for the years, 1970, 1975, 1980, 1985, 1990-1995, 2000, 2001, and 2002.

The information for the 1975-1990 time frame required a process of disaggregating and reaggregating ADOLWD's wage and salary information to reflect the creation of new boroughs and changes in reporting regions. Information for the 1970 time frame was created out of very scant employment data and involved some extrapolation of reported wages from 1975 back to 1970. Because of the unreliable character of the 1970 scenario, this time frame was eliminated from the final analysis.

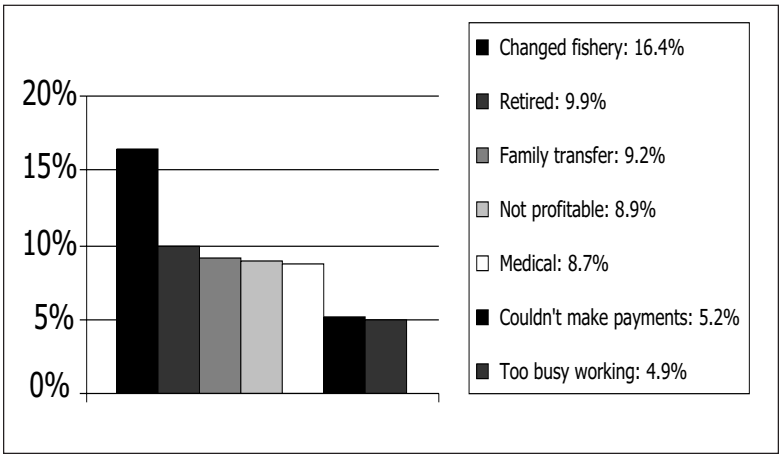
Information from ADOLWD and CFEC for 2001 is still preliminary and subject to revision. However estimates should be within 90 to 95 percent of final numbers.

The 2002 information presented here is estimates based on 2001 data that is adjusted by the ratio of weekly employment and wages reported for 2001 and 2002. The weekly employment and wages are reported for the state as a whole. The statewide ratios were applied to the 2001 census area information. Assuming no major economic structural changes from 2001 to 2002, the estimates should be within 85 to 90 percent of actual figures.

20 Detailed Reasons for Permit Transfers

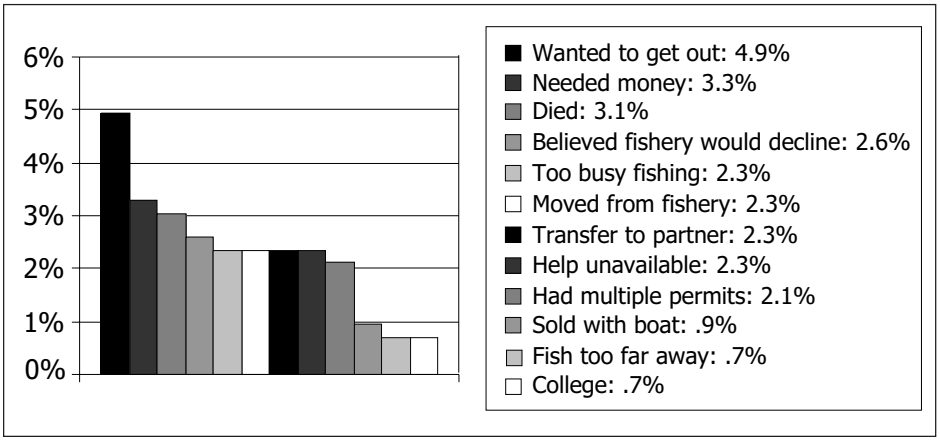
Survey interviewees responded to a series of questions regarding their history of salmon fishing, involvement in other fisheries, involvement in employment outside fisheries and the circumstances of their permit transfer (see Appendix E for the complete survey instrument). Based on the interviews, reasons for permit transfers were divided into 20 detailed categories. The last "category" entitled "Other" includes about ten percent of all responses and consists of a wide variety of one-of-a-kind reasons for transferring a permit. About 63 percent of responses fell into the top seven categories.

Figure 198.
Top Seven Reasons for Permit Transfers. All Survey Year Combined.



The Top Seven Reasons for Transfers: Over 16 percent of survey respondents sold or gave away their permits in order to change fisheries. About 25 percent of these individuals switched from hand to power trolling. The next most common reason for transferring, with ten percent of all interviews, was old age or retirement. Nine percent transferred their permit within the family without citing retirement or old age. Nine percent left the fishery because it was no longer profitable. Nine percent transferred their permit due to medical problems. Five percent said that they were unable to make payments and were forced to sell. Five percent became too busy working outside the fishing industry to justify keeping their permit.

Figure 199.
Permit Transfer Reasons, 2-4% Each of Total Responses.



Less Frequent Reasons for Transfers: The next 12 most frequent reasons given for transferring salmon permits each represented between two and four percent of total responses and together accounted for about 24 percent of all responses. Four percent simply wanted to "get out" of the fishery without suggesting any specific reason. Needing money for various reasons accounted for another three percent of permit transfers and three percent of permit holders died while in possession of their permits. Three percent left the industry because they believed it would decline significantly and wanted to sell before the permit's value dropped. Four categories each accounted for two percent of responses. One group was too occupied with another fishery to justify keeping the permit. One group transferred because they moved away from the fishery. Another gave their permit to a family member or partner who was better able to fish and the last explained that they transferred their permit because a family member who was essential to their fishing

operation had moved or died. Two percent transferred a permit because they possessed multiple permits. Three other reasons given accounted for less than one percent each of all responses: those that sold their permit with their boat, those that went to college, and those that said that the fish were running too far from home.

Comments on Each of the 20 Reasons for Permit Transfer

The following paragraphs expand and clarify the meaning of the "grouped" reasons given by survey respondents for transferring their permits. The two tables following these paragraphs summarize the 20 permit transfer categories, by percent, for each of the years examined.

Changed Fishery (70, 16 percent). The largest group of respondents transferred their permits in order to change the fishery in which they were involved. Of these 70 permit holders, 28 percent transferred their permit specifically to buy a permit in another region, stating a variety of reasons including household moves, differing fishery values and political issues. Another 24 percent transferred their hand troll permit in order to upgrade to a power troll permit and continue fishing. A number of others transferred in order to change gear types.

Retired (42, 10 percent). Forty-two respondents cited retirement due to age as their primary reason for transferring their salmon permit.

Family Transfer (39, 9 percent). Thirty-nine transfers took place specifically within the permit holder's family. Though transfers to family members show up in other categories, (including medical and retirement), these respondents gave no other reason for their transfer than the desire for another family member to have it. Forty-three percent of these transfers were to children and 24 percent to siblings.

Not Profitable (32, 9 percent). The fourth largest group, including 32 respondents, transferred their permits and left the salmon industry, because it was not profitable for them. The majority of respondents phrased this in one or more of five specific complaints: they couldn't make a living, there was no money in it, they were losing money, they couldn't afford to continue fishing, and low prices and low runs had driven them out. Twenty-three percent stated that poor management was at the root of the problem. They believed either that the runs were managed politically rather than biologically, or that biologists had made decisions based on poor science and damaged the runs.

Medical (37, 9 percent). Thirty-seven respondents sold their permits due to medical problems that prohibited them from fishing. These were not short-term, emergency medical transfers but long-term decisions to cease fishing for medical reasons.

Can't Make Payments (22, 5 percent). This category is distinguished from the "not profitable" category by the emphasis that the respondents placed on running out of money rather than not making enough money. Responses included inability to make payments, lack of money, going broke and being unable to finance a boat or permit. Of the 22 in this category, at least three respondents had their permits repossessed by the state.

Too Busy Working Outside of Fishing (21, 5 percent). These 21 respondents transferred their permits, because they became too involved in activity outside of the fishing industry to use their permit. Non-fishing activity included construction, teaching, flying, tugboat operating, charter fishing and involvement with family.

Wanted to Quit Fishing (17, 4 percent). Most of the 17 respondents in this category stated that they simply wanted to get out of salmon fishing, without volunteering any details. A few stated that fishing was no longer necessary for their family. During a separate portion of the interview, three of these 17 respondents commented about poor management, and five mentioned falling salmon prices.

Needed Money (14, 3 percent). Fourteen respondents sold their permits because they had a specific need for money at the time of the transfer. Three of these were building/buying houses, and another three needed money to enter other fisheries or to process fish.

Died (13, 3 percent). Thirteen permit holders died while in possession of their permit. Surviving members of the family were able to provide the history of these permits. In most cases, the spouse, sibling or child of the permit holder received the permit, and the majority of these permits then stayed in the family.

Believed Fishery Would Decline (11, 2 percent). These 11 permit holders stated that they transferred their permits because they saw the impending decline of the salmon industry and wanted to get out early. Many cited competition with farm salmon; others simply that the price was dropping.

Too Busy With Other Fisheries (10, 2 percent). Ten respondents sold their salmon permit because they were too involved in other fisheries to fish it. Two continued fishing salmon, two moved to non-salmon fisheries, two had two boats and couldn't operate both and one was too busy crewing to fish.

Moved Away from Permit Area (10, 2 percent). The ten respondents in this category moved too far away from their fishery to continue fishing. At least one returned to fishing.

Transfer to Partner (10, 2 percent). Ten respondents explained that they frequently transferred their permit between business partners and family members, usually depending on who was most available to fish during the season in question.

Family Help Unavailable (10, 2 percent). Ten respondents relied on family members, (mostly husbands and sons), to help fish their permits. When these crew members passed away or moved away, the permit holders were unable or unwilling to continue without their help and consequently transferred their permit.

Had Multiple Permits (9, 2 percent). Nine respondents possessed multiple permits and were unable to fish all of them due to overlapping seasons or regulations and subsequently transferred one of them.

Sold Permit with Boat (4, 1 percent). Four permit holders sold their permits as a package deal along with their boats.

Fish Running too Far from Home (3, 1 percent). Another three permit holders transferred, because regulations or changes in fish runs forced them to fish farther from home than they were willing to go. They cited more dangerous (less sheltered) conditions and the added cost of fuel as primary reasons.

Left for College (3, 1 percent). Three permit holders transferred when they left for college.

Other (43, 10 percent). Forty-three respondents explained that they transferred their permit for reasons that did not fall under any of the above categories. Examples are entering the Army, helping a friend, loss of a boat, trading their permit for property, competition with the sport fishing industry and divorce.

Appendix C

Figure 200.
Twenty Reasons for Permit Transfer.

	1980	1985	1990	1995	2000	Average, All Years	% Change 1980-20001	Point Difference 1980-2000
Changed fishery	13	13	19	19	6			
	15.7%	16.3%	25.3%	18.8%	6.9%	16.4%	-56.0%	-8.8%
Retired	8	3	9	7	15			
	9.6%	3.8%	12.0%	6.9%	17.2%	9.9%	78.9%	7.6%
Family transfer	6	10	5	6	12			
	7.2%	12.5%	6.7%	5.9%	13.8%	9.2%	90.8%	6.6%
Not profitable	6	4	10	12	6			
	7.2%	5.0%	13.3%	11.9%	6.9%	8.9%	-4.6%	-0.3%
Medical	10	6	4	10	7			
	12.0%	7.5%	5.3%	9.9%	8.0%	8.7%	-33.2%	-4.0%
Can't make payments	6	5	0	4	7			
	7.2%	6.3%	0.0%	4.0%	8.0%	5.2%	11.3%	0.8%
Too busy working outside of fishing	6	4	4	5	2			
	7.2%	5.0%	5.3%	5.0%	2.3%	4.9%	-68.2%	-4.9%
Wanted to get out	2	7	2	3	3			
	2.4%	8.8%	2.7%	3.0%	3.4%	4.0%	43.1%	1.0%
Needed money	2	5	2	4	1			
	2.4%	6.3%	2.7%	4.0%	1.1%	3.3%	-52.3%	-1.3%
Died	0	1	2	6	4			
	0.0%	1.3%	2.7%	5.9%	4.6%	3.1%	N/A	4.6%
Believed fishery would decline	1	3	4	2	1			
	1.2%	3.8%	5.3%	2.0%	1.1%	2.6%	-4.6%	-0.1%
Too busy with other fisheries	3	0	2	1	4			
	3.6%	0.0%	2.7%	1.0%	4.6%	2.3%	27.2%	1.0%
Moved away from permit area	2	3	3	1	1			
	2.4%	3.8%	4.0%	1.0%	1.1%	2.3%	-52.3%	-1.3%
Transfer to partner	2	1	2	3	2			
	2.4%	1.3%	2.7%	3.0%	2.3%	2.3%	-4.6%	-0.1%
Family help unavailable	3	1	1	2	3			
	3.6%	1.3%	1.3%	2.0%	3.4%	2.3%	-4.6%	-0.2%
Had multiple permits	1	1	0	5	2			
	1.2%	1.3%	0.0%	5.0%	2.3%	2.1%	90.8%	1.1%
Sold permit with boat	1	1	0	2	0			
	1.2%	1.3%	0.0%	2.0%	0.0%	0.9%	-100.0%	-1.2%
Fish running too far away	1	0	0	0	2			
	1.2%	0.0%	0.0%	0.0%	2.3%	0.7%	90.8%	1.1%
Went to college	0	1	1	0	1			
	0.0%	1.3%	1.3%	0.0%	1.1%	0.7%	N/A	1.1%
Other	10	11	5	9	8			
	12.0%	13.8%	6.7%	8.9%	9.2%	10.1%	-23.7%	-2.9%

Consolidation of the 20 Identified Transfer Reasons into Six Major Categories

- **Aging**: Includes the "Retired," "Medical," "Passed Away," and "Lack of Available Help".
- **Fishing Opportunities**: Those that changed fisheries, had multiple permits, or were too involved in other commercial fisheries.
- **Economics**: Includes the not profitable, those unable to make payments, and "Fishery will Diminish" groups.
- **Family/Partner**: Includes family transfers and partner transfers.
- **Non-Fishing Opportunities**: Includes those involved in shore-based or activities, wanting to leave the fishery, need immediate cash flow, or moved out and attended college.
- **Other**: Includes those who felt the distance to the fishing grounds was too far to travel, or who sold their commercial permit and boat.

Reasons Given for Permit Transfer

Twelve Survey Regions: The permit transfer data is aggregated into the following 12 regions: Aleutians East, Nome, Northwest Arctic, Kenai, Kodiak, Valdez – Cordova, Yakutat, and Yukon-Koyukuk. Bristol Bay, Dillingham and Lake & Peninsula were grouped into the Bristol Bay region, Bethel and Wade-Hampton into the Yukon-Kuskokwim Delta region, Anchorage, Fairbanks, Denali and Matanuska-Susitna into the Urban region, and all southeast Alaska into the Southeast Region.

Charts are not available for the Aleutians East, Nome, Northwest Arctic, Yakutat and Yukon-Koyukuk regions due to the limited number of survey responses from these regions.

Figure 201.
Transfer Categories by Region.

Transfer Categories by Region	Aging	% of Region	Economics	% of Region	Fishing Opportunities	% of Region	Family/ Partner	% of Region	Non-Fishing Opportunities	% of Region	Other	% of Region	Interviews	% of Total Interviews
Aleutians East Borough	1	12.5%	1	12.5%	0	0.0%	2	25.0%	0	0.0%	3	37.5%	8	1.9%
Bristol Bay Region	15	36.6%	5	12.2%	4	9.8%	6	14.6%	3	7.3%	8	19.5%	41	9.8%
Kenai Peninsula Borough	16	19.8%	19	23.5%	19	23.5%	8	9.9%	3	3.7%	16	19.8%	81	19.3%
Kodiak CA	1	5.6%	4	22.2%	4	22.2%	4	22.2%	1	5.6%	1	5.6%	18	4.3%
Nome CA	5	45.5%	1	9.1%	0	0.0%	2	18.2%	2	18.2%	5	45.5%	11	2.6%
NW Arctic CA	0	0.0%	0	0.0%	0	0.0%	1	100.0%	0	0.0%	0	0.0%	1	0.2%

Aleutians East Borough: Eight permit holders responded from Aleutians East Census Area. Two fell into the "Family/Partner" category, one into "Aging," one into "Economics" and three into "Other."

Bristol Bay Borough: Forty-one calls to Bristol Bay region residents were made and 36 percent responded. The majority fell into the "Aging" category. Another 15 percent into "Family/Partner," 12 percent into "Economics," ten percent into "Fishing," seven percent into "Non-Fishing Opportunities" and 20 percent into "Other."

Kenai Peninsula Borough: Kenai Peninsula Census Area represented approximately 20 percent of all survey interviews, totalling 81 responses. Responses were evenly split between "Economics" and "Fishing" (24 percent), and evenly split between "Aging" and "Other" (20 percent). "Family/ Partner" transfers represented 10 percent and other "Non-Fishing Opportunities" four percent.

Kodiak Island Borough: Eighteen permits holders were interviewed from Kodiak Census Area. Equal numbers fell into "Economics," "Fishing," "Other" and "Family/Partner" (four responses, or 22 percent each) and one response into both "Aging" and "Non-Fishing Opportunities."

Nome Census Area: Of the eleven responses from the Nome region, five fell into the "Aging" category, two each into "Family/Partner" and "Non-Fishing Opportunities," and one each into "Economics" and "Other."

Northwest Arctic Census Area: The single respondent from Northwest Arctic Census Area transferred his permit to a family member.

Southeast Region: The Southeast region produced the most responses with 127 successful interviews, comprising 30 percent. The majority fell into "Fishing" category, 20 percent into "Aging," 15 percent into "Economics," nine percent into "Family/Partner," and seven percent into "Non-Fishing Opportunities." Twenty-one percent gave other reasons for transferring.

Urban Region: Urban dwellers, the majority from Anchorage, accounted for 17 percent of total interviews. Over 20 percent of responses from this group each fell into the "Economics," "Fishing," and "Aging" categories. Eleven percent of responses are attributable to "Non-Fishing Opportunities," eight percent into "Family/Partner" transfers, and 17 percent into "Other."

Valdez-Cordova Census Area: Eighteen permit holders were interviewed from Valdez-Cordova Census Area. Six of these fell into the "Fishing" category (33 percent), three into "Economics," two each into "Non-Fishing Opportunities" and "Aging," one into "Family/Partner" and four into "Other."

Yakutat Census Area: Of the six responses from Yakutat, half fell into the "Aging" category, and one each into "Economics," "Other," and "Family/Partner."

Yukon-Kuskokwim Delta Region: Thirty-three responses were collected from the Yukon-Kuskokwim Delta region, 36 percent of which fell into the "Aging" category. Eighteen percent into "Non-Fishing Opportunities," 15 percent into "Family/Partner," 12 percent each into "Other" and "Economics," and six percent into "Fishing."

Yukon-Koyukuk: Four permit holders were interviewed from the Yukon-Kuskokwim Census Area. Three of the responses fell into the "Aging" category and the other permit was traded for a cabin.

Survey Instrument for Survey of Limited Entry Permit Transfers

Questions for Salmon Baseline Permit Outflow Survey

Name_____ Permit Type_____ Year_____ City _____

1. In what year did you begin fishing salmon? _____
2. How many salmon permits have you owned? _____
3. Do you own a salmon permit now? No____ Yes____ Current permit _____
4. How did you come to fish commercially? _____
5. Does your family have a history of commercial fishing? No____ Yes_____

   Comments: _____
6. Have you fished other species than salmon? Halibut_____ Black Cod_____ Crab_____ Shrimp_____ (Gray) Cod_____ Herring_____ Herring Roe_____ Other _____
7. Did you work in other industries besides fishing while you had this permit? No____ Yes_____ Which: _____
8. Did you fish your permit every season that you owned it? No____ Yes_____

   Comments: _____
9. Can you estimate how much salmon fishing contributed to your family's income each year? Less than 10%____ 10-25%____ 25-50%____ More than 50%____ 100%____
10. Why did you transfer your permit? _____
12. Did you sell or give it away? Sold____ Gift____ Given to _____
13. Did you retire after transferring or take/continue other work? Retired____ Worked_____ Type of work _____
14. During your time in the salmon industry, did you make any observations that you'd like to share with us? Any comments…changes that you noticed…?

    _____

    _____
15. If not currently fishing), what, if anything, would motivate you to reenter the salmon industry?

    _____
16. Is there anything else you'd like to mention?

    _____

    _____

    _____

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